Cape Peninsula University of Technology

STUDENT PREFERENCES FOR ACCOMMODATION AT A CAPE TOWN UNIVERSITY: AN APPLICATION OF THE STATED PREFERENCE APPROACH

by

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Thesis submitted in fulfilment of the requirements for the degree

Master of Marketing

in the Faculty of Business & Management Sciences

at the Cape Peninsula University of Technology

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Cape Town

24 October 2019

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ABSTRACT

This thesis sought to investigate students' preferences regarding university accommodation. The object was to identify the aspects and elements of housing that students deemed most desirable. The research also aimed to ascertain which socio-demographic variables might serve as predictors of preference in student housing.

The thesis focused on student housing at a university in Cape Town, South Africa. The researcher adopted a stated preference approach, applying direct measurement and conjoint analysis methods to answer the research questions. The study commenced with qualitative exploratory research, including a literature review and focus group interviews with students. This was followed by collection of cross-sectional quantitative data using person-administered, structured questionnaires distributed among students at the university. SPSS software was used to analyse a total of 457 completed questionnaires.

The direct measurement results indicated that most students prioritised convenience, safety, cost and privacy when it came to choosing accommodation. The three most important attributes as ranked by respondents were having unlimited free WiFi, the inclusion of a 24-hour computer lab in the building, and 24-hour on-site security. In addition, respondents favoured the presence of a convenience shop/kiosk in the residence, followed by sharing showers with students of their own gender, and being within walking distance of campus. Preferences for some but not all the dimensions of accommodation appeared to be influenced by gender, age group and study level. When indicating their willingness to pay (WTP) for a variety of elements relating to accommodation, it emerged that the question of sharing the space in their room – their living and learning space – was very important to the students. The results showed that, apart from having unlimited WiFi and 24-hour on-site security, the aspects for which respondents were prepared to pay most concerned the private space of the individual, e.g. room privacy and room size, as well as having their own toilet and shower. WTP attributes also varied among students according to age group, gender and level of study.

Results from the stated preference (conjoint) experiment analysis showed that students were most sensitive about the sharing of ablutions and number of roommates, strongly preferring private rooms and facilities, or sharing with fewer other students. Monthly rent is next most influential, followed by distance from campus. The model also showed significant differences in the preferences of students based on their gender.

Research in this field is overdue because, owing to recent increases in the tertiary student population in South Africa, there is a growing shortage of student accommodation. Current and future student housing needs must be assessed, and any such assessment requires a thorough grasp of current student accommodation preferences. The results of this research thus contribute to the knowledge and understanding available to managers and developers of student accommodation regarding students' requirements and preferences. The findings can serve as a set of guidelines for developers of student housing and as a foundation for formulating associated marketing strategies.

Despite the existence of extensive research on student housing, few studies have focused on the preferences of students in developing countries, and even fewer in South Africa. This research seeks to fill this gap by increasing awareness and understanding of students' preferences with regard to university accommodation.

KEY WORDS: Student accommodation, Student housing, Stated preference, Conjoint analysis, Accommodation attributes, Environment-behaviour research, Students' preferences

ACKNOWLEDGEMENTS

I wish to thank:

- My supervisor and co-supervisor, Drs Norbert Haydam and Corrie Uys, for their constant guidance and encouragement during the research.
- The librarians at CPUT for their generous help.
- The interviewers (students from the Department of Real Estate) who worked with me in the collection of data.
- The interviewees (students residing in CPUT university accommodation).
- CPUT for allowing me to use their data.

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TERMS AND CONCEPTS

Bounded rationality	The limits upon the ability of human beings to adapt optimally, or even satisfactorily, to complex environments (Simon, 1991:132); the idea that when individuals make decisions, their rationality is limited by the tractability of the decision/problem, the cognitive limitations of their minds, and the time available to make the decision. Decision-makers in this view act as satisfices, seeking a satisfactory solution rather than an optimal one. Herbert A. Simon proposed bounded rationality as an alternative basis for the mathematical modelling of decision-making, as used in economics, political science and related disciplines. It complements "rationality as optimisation", which views decision-making as a fully rational process of finding an optimal choice given the information available (Gigerenzer & Selten, 2001).
Census survey	A situation where the data is obtained from every member of the target population (Haydam & Mostert, 2013:124).
Conjoint analysis approach	See stated preference method.
Conjunctive decision rule	The consumer sets minimum acceptable levels on all important attributes and eliminates any alternative that does not meet all the minimums (Gibler & Nelson, 2003).
Consumer research	The field of consumer research developed as an extension of the field of marketing research to enable marketers to predict how consumers would react in the marketplace, and to understand the reasons they made the purchase decision they did. Consumer research undertaken from a managerial perspective to improve strategic marketing decisions is known as positivism (Schiffman & Kanuk, 2004:45).
CPUT	Cape Peninsula University of Technology

Cross-sectional study	A once-off study (also called an 'ad-hoc' study) which provides a so-called snapshot of the topic under investigation at a single point in time (Haydam & Mostert, 2013:41).
Department of Higher Education and Training	The Department of Higher Education and Training (DHET) was established in 2009 when the former Department of Education was divided into two sections: Basic Education and Higher Education and Training. The new Department was specifically established to focus on post-school education and training (DHET, 2017).
DHET	See Department of Higher Education and Training.
Exploratory research	This type of research is used when searching for insights into the general nature of the problem, the possible decision alternatives and relevant variables that need to be considered (research purpose). Typically there is little prior knowledge on which to build. The research methods associated with an exploratory research design are highly flexible, unstructured and qualitative. Literature reviews and individual and group unstructured interviews are typical exploratory approaches (Tustin et al., 2005: 84).
Gentrification	The process by which central urban neighbourhoods that have undergone disinvestment and economic decline experience a reversal, reinvestment, and the in-migration of a relatively well-off, middle- and upper-middle-class population (Van Vliet, 1998, as cited in Beamish et al., 2001:24).
HEI	See Higher Education Institutions.
Heuristic	Enabling a person to discover or learn something for themselves. *'a 'hands-on' or interactive heuristic approach to learning'* (*Oxford living dictionaries*, 2017)
Higher Education Act	The Higher Education Act, 1997 (Act No. 101 of 1997): to regulate higher education; to provide for the establishment, composition and functions of a Council on Higher Education; to provide for the

	establishment, governance and funding of public higher education institutions; to provide for the appointment and functions of an independent assessor; to provide for the registration of private higher education institutions; to provide for quality assurance and quality promotion in higher education; to provide for transitional arrangements and the repeal of certain laws; and to provide for matters connected therewith (SAQA, 2010).
Higher Education Institutions	Any institution that provides higher education on a full-time, part-time or distance basis (SAQA, 2010)
HMO	See houses in multiple occupation.
Household	A group of people living together in a housing unit (Beamish et al., 2001:24).
Household survey	Demand side survey. In the case where objects or people under investigation are at formal or informal places of residence (permanent or temporary) (Haydam & Mostert, 2013:103).
Houses in multiple occupation	Privately rented house let to three or more unrelated tenants who share common facilities (Hubbard, 2009:1904).
Housing preferences	Housing that is ideal for, or most desired by, a particular individual or household (Beamish et al., 2001:24). Preferences are temporary states of mind about what kind of housing is desired and feasible at the current moment given the current constraints (included is the idea that preferences involve the choice of one option over another). Preferences are inherently unstable and can be expected to change for a specific household whenever significant changes in the constraints occur (Morris & Winter, 1978:26, 40, as cited in Shi, 2005:5).
Housing norms	Criteria used to make a subjective evaluation of housing. Standards by which a culture judges housing for families and individuals (Beamish et al., 2001:24).

	Housing norms reflect the social pressure on individuals and households to live in housing with prescribed characteristics. Norms are not merely characteristics of households, they are characteristics of societies and segments within societies. Housing norms are societal phenomena but are implemented by households (Morris & Winter, 1978:287, as cited in Shi, 2005:6).
Housing values	Values that influence the selection and preference for housing (Beamish et al., 2001:24). Housing values are the underlying criteria for all choices in housing and all aspects of life. Values are concepts we have about what is desirable, what ought to be (Roske, 1983, as cited in Shi, 2005:6).
IDIs	See in-depth interviews.
In-depth interviews	These uncover hidden motivations, prejudices and attitudes towards sensitive issues with open-ended probing questions. The direction of the interview is guided by the responses of the respondent and follows a process in which the interviewer thoroughly probes each answer and uses the replies as the basis for further questioning (Haydam & Mostert, 2013:76).
Interdisciplinarity	The essence of interdisciplinary studies, which is manifested through research involving two or more knowledge domains (Repko, 2008:5-6).
Interdisciplinary	The word consists of two parts: inter and disciplinary. The prefix inter means “between, amongst or in the midst”. Disciplinary means “of or relating to a particular field of study” or specialisation. So a starting point for the definition of interdisciplinary is “between fields of study” (Repko, 2008:5-6).
Lexicographic rule	The consumer ranks the determinant attributes in order of importance. If one property is better than all the others on the most important attribute, then the consumer selects that property (Gibler & Nelson, 2003).

Life course approach	A heuristic device to study the interaction between individual lives and social change. It is a way of conceptualising lives within the context of families, society and historical time The life course can be defined as the sequence of positions of a particular person in the course of time (Kok, 2007:204).
Lifestyle	An individual's or family's way of living (Beamish et al., 2001:24).
Millennial generation	The cohort of people born between 1979 and 1994 (Sweeney, 2005:165).
MAUT	See Multi-attribute utility theory
Multi-attribute utility theory	A set of axiomatic theories of preference. The central theorem of each theory says that if people can make choices based on their preferences and if these choices satisfy the axioms, then one can (a) assign numbers to utilities or values and (b) specify a rule for combining the numbers into a summary measure, such that an object with a larger summary measure is preferred over an object with a smaller summary measure (Gregory et al., 1993:187).
Norms	Culturally defined standards for behaviour (Beamish et al., 2001:24).
Off-campus privately owned housing	Means privately owned housing units. This can vary from large blocks of rooms similar to residence halls, to multiple bedroom houses that house only students, through to individual rooms in houses occupied by the home owner. This includes a housing facility leased by the university directly from a landlord or indirectly through an accredited leasing agent (South Africa, 2015).
On-campus accommodation	Means units for accommodation on the premises of the university, which can vary from large blocks of rooms similar to residence halls, to multiple bedroom houses that house students (van Ham, 2015).
Outsourcing	Service or facility provision from an outside party.

PBC	See perceived behavioural control.
PBSA	See purpose-built student accommodation.
Perceived behavioural control	The perception of the perceived ease or difficulty of performing the behaviour (Ajzen, 2002:665).
POPI Act	See Protection of Personal Information Act.
Positivism	A metatheory that is based on the key assumption that the social sciences should follow the lead of the natural sciences and model their own practices on that of the successful natural sciences. This translates into a practice of research which emphasises the search for universal laws of human behaviour, quantification in measurement, and a definition of 'objectivity' which requires a distance between the researcher and the research subjects (Babbie et al., 2001:645).
PPP	Public-private partnerships.
Pragmatism	A mixed-method perspective to get results by using a combination of qualitative and quantitative methods (Thomas, 2003:7).
Protection of Personal Information Act	The Protection of Personal Information Act (also known as the POPI Act), No 4 of 2013, promotes the protection of personal information by public and private bodies (SAICA, n.d.).
PRS	See private rented sector.
Public University	Any public higher education institution that is established, deemed to be established, or declared as a public higher education institution under the Higher Education Act, 1997 (Act No. 101 of 1997), or any amendment thereof (van Ham, 2015).

Purpose-built student accommodation	Non-university associated accommodations intentionally built for the housing of students (Chan et al., 2011:ix).
Psychographics	Description of people's lifestyles (Beamish et al., 2001:24).
Qualitative methods	Qualitative methods involve a researcher describing kinds of characteristics of people and events without comparing events in terms of measurements or amounts (Thomas, 2003:1).
Quality norms	Culturally accepted standards for the structural condition of a structure and the amenities that should be present. The quality level should be related to family social status (Beamish et al., 2001:24)
Quantitative data	Quantitative data is differentiated from exploratory data by the use of probability sampling techniques (i.e. simple random sampling, systematic random sampling, stratified random sampling, cluster random sampling and multi-stage random sampling) in acquiring primary data (Haydam & Mostert, 2013:82).
Quantitative methods	Quantitative methods focus attention on measurements and amounts (more and less, larger and smaller, often and seldom, similar and different) of the characteristics displayed by the people and events that the researcher studies (Thomas, 2003:1).
Research methodology	The theory of how research should be undertaken (Saunders et al., 2009: 3).
Research methods	Refers to techniques and procedures used to obtain and analyse data, including questionnaires, observation and interviews as well as both quantitative and qualitative analysis techniques (Saunders et al., 2009:3)
Sample element	The smallest single entity (i.e. an object or person) from which the researcher will obtain the information sought (Haydam & Mostert, 2013:104).

Sample unit	The basic unit which contains the elements of the population to be sampled (Haydam & Mostert, 2013:103).
SAMRA	See South African Marketing Research Association.
Satisficing	The term satisficing, a combination of satisfy and suffice, was introduced by Herbert A. Simon in 1956. Satisficing is a decision-making strategy or cognitive heuristic that entails searching through the available alternatives until an acceptability threshold is met (Colman, 2014).
Simple random sampling technique	A technique where each sample unit of the population has a known and equal chance of being selected for the sample (Tustin et al., 2005).
South African Marketing Research Association (SAMRA)	A non-profit, voluntary association of research organisations and researchers who conduct marketing research, social research and opinion polling research (SAMRA, n.d.).
Space norms	Culturally accepted standards for the types and amount of space a family or individual should have, based on family size and composition (Beamish et al., 2001:24).
SSA	Sub-Saharan Africa.
Stated preference method	This method presents respondents with experimentally designed descriptions of hypothetical objects, or choice alternatives. Respondents are asked to rate these alternatives or choose from sets of alternatives. The responses are analysed to reveal how different characteristics of the alternatives contribute to the overall evaluations (Oppewal et al., 2005:114).

Stochastic	Having a random probability distribution or pattern that may be analysed statistically but may not be predicted precisely *(Oxford dictionaries*, n.d.).
Structural norms	Culturally acceptable idea of the structural type appropriate for an individual or family (Beamish et al., 2001:25).
Student	A person engaged in study; one who is devoted to learning; a learner; a pupil; a scholar; especially, one who attends a school, or who seeks knowledge from professional teachers or from books; as, the students of an academy, a college, or a university; a medical student; a hard student *(FreeDictionary,* 2019).
Student housing	Purpose-built housing that caters to tertiary students (JLL, 2016:5).
Student village	A number or a cluster of buildings on or off campus, exclusively used to house the students of the university (South Africa, 2015a:4).
Studentification	A term coined to describe the effect of relatively high numbers of higher education students moving into established residential neighbourhoods (Ijasan & Ahmed, 2016:131).
SU	Stellenbosch University
Target population	Any complete group that shares some common set of characteristics. If the group under investigation is finite (i.e. the number of sample units is known) as in the case of household or corporate surveys, then one refers to it as the target population (Haydam & Mostert, 2013:124).
Technical Vocational Education and Training colleges	Previously known as FET (Further Education and Training) colleges have been renamed TVET colleges.
Tenure norms	Culturally accepted idea of whether owning or renting is more appropriate (Beamish et al., 2001:25).

Theory of Planned Behaviour	A social-psychological model for understanding and predicting human behaviour. The TPB focuses on the specific consumer behaviour of interest and the goal is to provide a framework for understanding the determinants of the behaviour. The theory allows researchers to predict intentions and behaviour with respect to the use of a product and in relation to choice among different products (Ajzen, 2015:125).
Theory of Reasoned Action	The theory developed by Fishbein and Ajzen is used to predict and understand motivational influences on behaviour. The theory posits that behavioural intentions, which are the immediate antecedents to behaviour, are a function of salient information or beliefs about the likelihood that performing a particular behaviour will lead to a specific outcome (Madden et al., 1992:3).
Time frame	The time when the fieldwork is expected to run out (Haydam & Mostert, 2013:105).
TPB	See theory of planned behaviour.
TRA	See theory of reasoned action.
TVET	See Technical Vocational Education and Training Colleges.
UCT	University of Cape Town.
UWC	University of Western Cape.
Values	Internalised standards which materially affect the way a person will react when confronted with a situation permitting more than one decision (Beamish et al., 2001:25).
WTP	Willingness to pay.

CHAPTER 1
INTRODUCTION

1.1 Background

This thesis is situated within the field of housing research, a complex field that can be examined from various disciplinary perspectives, including the economic, architectural, social and cultural (Thomsen, 2008:9).

The field of student housing has experienced rapid change over the past two decades. Globally there has been an increasing shortage of student accommodation, with growing student numbers outstripping the ability of educational institutions adequately to provide accommodation facilities (JLL, 2016:5). Sub-Saharan Africa (SSA) is undergoing rapid population growth, with the demand for education outstripping supply, and many students from the region choose to study in South Africa (SA) (Karodia, 2019:2).

In her PhD work on student housing in Norway, Thomsen (2008:579) found that, despite extensive previous housing research focusing on family life, there was limited research on young people's housing needs. According to Thomsen (2008), the reason for this could be that the group as a whole has low economic status. The temporary nature of young people's accommodation, where quality is less important than in permanent housing, could be another reason. However, Thomsen (2008) points out that the housing situation of students and young people has actually been of interest in some academic fields, with behavioural aspects and environmental relationships being studied from various perspectives.

One kind of research (e.g. Rugg et al., 2000 & 2002; Hubbard, 2009; Smith & Hubbard, 2014) concentrates on how student demand influences local housing markets, including the effects that a growing population of students has on parts of university towns that are popular amongst students. Issues such as the role that housing plays in the development of an individual to become an independent grown-up and the changing concepts of home have also been of interest to researchers, including Kenyon (1999), Ford et al. (2002), and Rugg et al. (2004).

> Ford et al. (2002:2455) identify five different housing pathways young people typically follow after entering the housing market: "the chaotic, the unplanned, the constrained, the planned (non-student), and the student pathway". Pathways should be seen as "the social practices of a household relating to housing over time and space", applying it as a general concept for people's housing careers (Clapham, 2005, as cited in Thomsen, 2007:580). Compared with other young people's prospects, the student pathway is seen as a privileged entrance to the local housing market as students are supported by family and higher education institutions. (Thomsen, 2007:579-580)

The focus of other researchers is more on the physical characteristics of student housing, which Thomsen (2007:580) calls the 'objective' or measurable physical housing attributes. The housing situation of students has also increasingly become a topic of interest in environment-behaviour studies (e.g. Kaya & Erkip, 2001; Oppewal et al., 2005; Thomsen, 2007; Amole, 2011; Garmendia et al., 2012; Ghani & Suleiman, 2016; Ijasan & Ahmed, 2016; Verhetsel et al., 2016; Tazelaar, 2017).

In their study, Oppewal et al. (2005) apply a stated preference approach, a method utilising designed hypothetical profiles with respondents rating and choosing between options. The results show that UK students' accommodation preferences are influenced by the number of students sharing ablutions, the distance from campus, and the size of the room (Oppewal et al., 2005:122).

In this thesis an interdisciplinary approach was adopted so as to include research perspectives from the fields of psychology, sociology, consumer behaviour, marketing and architecture. Focusing on the perspectives of individual students, the research contributes to studies of people and their surroundings.

The demand for student housing in SSA is growing rapidly as result of increases in student numbers across SSA (JLL, 2016:3). From 2000-2014 the tertiary enrolment rate in SSA rose from 4.3 per cent to 8.2 per cent, implying a growing student housing demand, particularly in new purpose-built accommodation. This trend is supported by PWC research which indicates that the young population is one of the main drivers of growth in the African real estate sector (PWC, 2015:15). World Bank figures also show that Africa has the lowest median age of all the continents. Moreover, extrapolations indicate that the 2015 African population of 226 million between the ages of 15 and 24 years will have doubled by 2045, driving growth in housing demand, including student housing (PWC, 2015:15).

In SA, with 26 public universities and 50 TVET colleges, student numbers have more than doubled over the past two decades, growing from half a million to 1.2 million currently (Rensburg, 2016). Local universities are facing huge challenges as far as housing their students is concerned.

For the 2015 academic year it was estimated that 207 000 South African university students and 400 000 Further Education & Training (FET) students were unable to find adequate housing (Anderson, 2014). Students are also increasingly coming from the rest of Africa to

study in SA, and they need accommodation (Anderson, 2015). With steadily rising numbers the government aims to accommodate approximately 1.6 million students by 2030 (Rensburg, 2016).

In SA there are three stakeholders in the student housing market, namely the government, universities and the private sector (Schooling, 2015). Commercial interest in the student housing sector in SA only really started after the publication in 2012 of the 'Report of the Ministerial Committee for the Review of the Provision of Student Housing at South African Universities' by the Department of Higher Education and Training (DHET) (Rensburg, 2011), when society for the first time became aware of the true extent of the student housing shortage.

The review report noted that there were approximately 107 000 university residence beds available in 2010, accommodating in university residences barely 18 per cent of the approximately 583 000 enrolled full-time students, including only 5 per cent of first-year students. The shortage was a consequence of limited resources for student housing infrastructure, coupled with the maintenance and operating costs of residence buildings (DHET, 2016). The report recommended that accommodation should be provided for 50 per cent to 80 per cent of students. Furthermore, an extra 400 000 beds would be needed by 2030 in order to meet the enrolment targets encompassed in the National Development Plan and the Post- School Education and Training Policy (DHET, 2016:3).

The challenge at TVET colleges is just as overwhelming. In 2015 a DHET survey of the 50 public TVET colleges indicated that there were only 10 120 beds available for 710 000 college students, with colleges only able to provide accommodation for 1 in 70 students, barely 1.4 per cent. In order to meet the immediate demand it is estimated that at least 100 000 student beds are needed at TVET colleges (DHET, 2016). Since the publication of the ministerial report review, the situation has deteriorated further, with increasing numbers of students relocating to the cities to join colleges and universities (Rensburg, 2011).

According to the report review, the estimated cost to government would be approximately R82.4 billion to overcome this shortage within ten years. In the face of costs like this it was acknowledged that the private sector could contribute significantly as a stakeholder in the provision of student accommodation (Rensburg, 2011). Academic institutions and property companies across the country have noted the student accommodation shortage in SA, and companies are increasingly making it their exclusive business to build and manage housing for university students (Anderson, 2014).

Presently only a fifth of students requiring accommodation are catered for by their institutions. In 2015 the government allocated R1.6 billion for the construction of student housing at universities. With 4 out of 5 students in need of accommodation, currently there is a shortfall of 220 000 beds, which – at a build average of R200 000 per bed – amounts which to R44 billion (Schooling, 2015).

In the light of the shortage of student accommodation the DHET in 2015 gazetted a policy on student housing standards. Aiming to provide more and improved student accommodation, close to R1.7 billion has been apportioned for student accommodation development (Mahlaka, 2016).

The recent growth in SA's tertiary student population and the resultant shortage of adequate residential accommodation has necessitated research in the field. In addition to the quantitative scarcity, the shortfall is also qualitative. The proximity to campus, the quality of the accommodation and its fittingness as a place to study are issues to be addressed (Planting, 2014). In order to understand students' accommodation needs, their points of view have to be investigated. New buildings should be developed and existing buildings adapted according to these preferences.

The current study investigates student accommodation preferences at a university in Cape Town. The research takes place on the District Six campus of the Cape Peninsula University of Technology (CPUT), a university with more than 35 000 students.

1.2 Problem statement

Driven by steadily rising student numbers, a lack of funds and an ageing student housing infrastructure, universities all over the world are increasingly facing student accommodation shortages. New buildings have to be constructed to house the growing student population, and current buildings adapted to suit students' changing needs. In contrast to the Western world, where many studies have been conducted on student accommodation, not much research on the issue has targeted developing countries, including SA with its diverse student population. Furthermore, in spite of prolific student housing research globally, very few research projects have actually focused on the measurement and analysis of university students' accommodation preferences.

The aim of this research is to identify these preferences and the drivers behind them. Students are increasingly seen as academic consumers, shopping for the best educational package, and student housing is one of the key areas in the mix of services that universities can offer

(Macintyre, 2003:110). From a marketing angle alone, it is important to understand how students choose their accommodation.

The researcher aims to identify the preferences of students by investigating what aspects of accommodation they find attractive and desirable. In the process, the researcher intends to identify ideas that might be of value for providers of student housing.

With regard to the methodology of measuring housing preferences, previous related research distinguishes between two types of preference: stated and revealed (Timmermans et al., 1994:215; Coolen & Hoekstra, 2001:286; Jabareen, 2005:135). In contrast to revealed models, which are based on housing choices observed in real markets, stated preferences (the method adopted in this study) are based on hypothetical or intended choices.

Studies of housing preference have shown not only that people have preferences for different aspects of housing but also that these preferences reflect certain demographic characteristics (Gifford, 1997 as cited in Amole, 2011:46). However, few studies have examined students' preferences in the context of student accommodation.

1.3 Research aims and objectives

The overall aim of the study is to investigate and measure the preferences of students for various aspects of accommodation, and to determine whether preferences vary between different types of student.

Targeted at measurable outcomes and intended to point the direction in which the researcher will go in order to achieve the research aim (Ahmed & Opoku, 2016:22-23), primary and secondary research objectives have been identified and formulated:

1.3.1 Primary research objective

The primary research objective is to determine the specific student accommodation preferences of full-time students.

1.3.2 Secondary research objectives

Secondary objectives derived from the primary objective are:

- To identify the relevant room features.
- To identify their degree of importance in students' housing preferences.

- To determine how much more students are prepared to pay for additional required features.
- To establish how students prioritise accommodation attributes.
- To determine the relationship between the housing preferences of students and their socio-demographic characteristics.

1.4 Research questions

Bearing these objectives in mind, the research questions are posed as follows:

- Which room attributes are important in students' housing preferences, and to what degree?
- What is students' willingness to pay (WTP) for these features?
- How do students compare, or trade off, the importance of one feature with or against another?
- Which socio-demographic characteristics explain students' housing preferences, and to what extent?

1.5 Research methodology

The diagram below illustrates the structure of the research methodology.

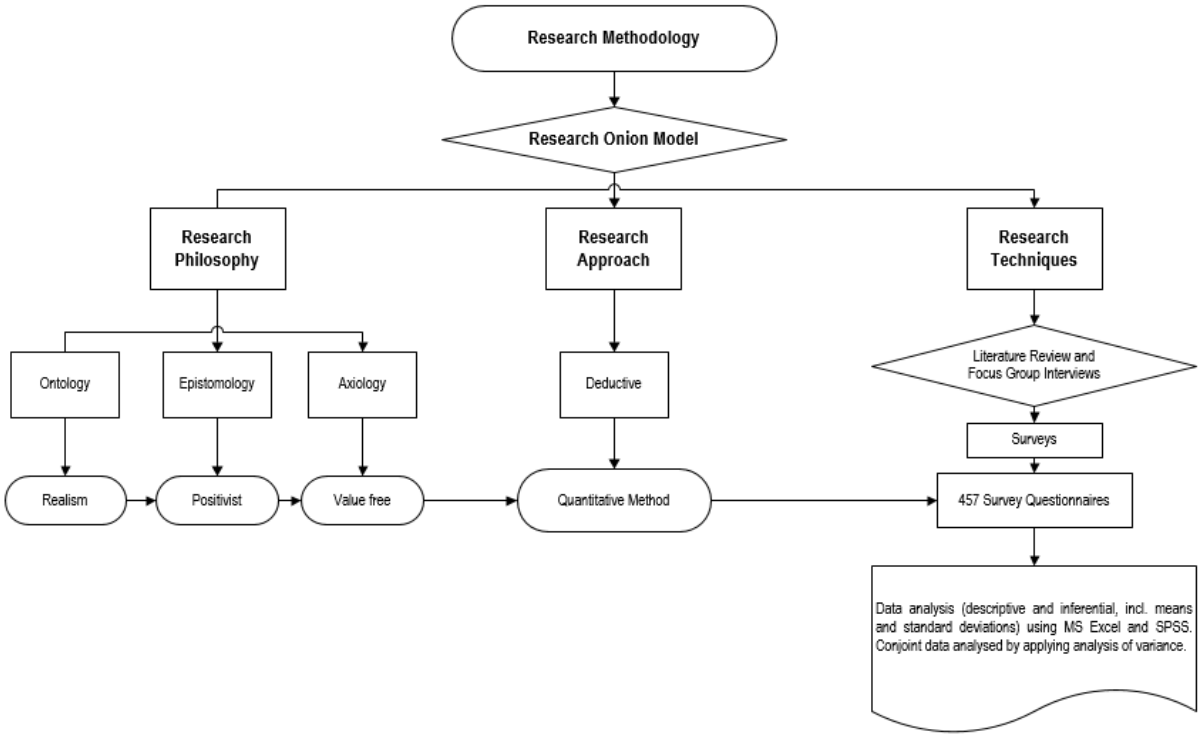

Figure 1.1: Research methodology framework

Adapted from Omotayo & Kulatunga (2015:11)

1.5.1 Research philosophy

As the epistemology of positivism is sympathetic to the objectives of this study, the research is informed by the philosophy of positivism.

Based on the key research objective, which is to give an account of students' overall preferences regarding their accommodation by exploring various room features and student characteristics, a quantitative deductive approach was adopted. This approach enhances the generalisability of the results, the replicability of the research, and its capacity for comparison with similar studies (Aziz et al., 2016:93).

1.5.2 Research approach

In keeping with the positivist philosophical stance of this study and its quantitative deductive approach, the survey strategy was used. Saunders et al. (2009:144) note that the survey strategy is typically associated with the deductive approach.

1.5.3 Research techniques

To understand the extent of the problem, the researcher initially conducted some exploratory research, using currently existing theories and hypotheses as a set of guidelines. This qualitative exploratory research served as the groundwork for the quantitative descriptive research.

1.5.3.1 Literature review and focus groups

The exploratory research included a literature review as well as conversational interviews with student focus groups.

A review of relevant literature was conducted to gain an in-depth understanding of the research field and place it squarely within the South African context. The researcher utilised the CPUT library database of academic journals to carry out the literature review, focussing on research conducted on similar topics as reported in sources such as Google Scholar, Emerald, EBSCOHost, ScienceDirect, Scopus and Springerlink.

In order to get further insight into the factors that students take into consideration when choosing a room, the researcher initially conducted cross-sectional exploratory focus group interviews, during which students were given the opportunity to identify the aspects of accommodation that they considered important when choosing a room. In total seven semi-structured interviews with student focus groups were conducted. The flexible structure of the interviews allowed the interviewees to respond freely (Thomsen, 2008:31). An attempt was

made to include a diversity of CPUT students who live in student housing, with the researcher using her personal judgment to select the samples (Haydam & Mostert, 2013:126). The results of this exploratory research were subsequently utilised in compiling the final questionnaire.

1.5.3.2 Survey

Once the groundwork was done, in order to answer the research questions, an empirical study was conducted in the form of a cross-sectional person-administered survey with a sample of CPUT students (n=457).

Survey participants

The present research was conducted at the District Six campus of the CPUT in Cape Town, a university with more than 35 000 students. The university has a range of student accommodation, varying according to the age and condition of the buildings, the size of rooms, room and ablution sharing options, as well as distance from campus. It was felt that this diversity makes the campus a good site for researching student housing preferences. The research population from which the sample was collected comprises 4 411 students who reside in 12 university residences in the vicinity of the District Six campus.

Survey questionnaire design

The questionnaire of Oppewal et al. (2005) was used as a template to design a structured person-administered questionnaire. In the questionnaire a conjoint choice experiment was combined with additional questions about students' accommodation preferences and socio-demographics.

The first two sections of the questionnaire comprised questions about the importance of specific accommodation features and respondents' attitudes using a 9-point Likert-type scale. Thereafter, students' willingness to pay (WTP) extra for certain features was investigated. In order to make it as close to real life as possible, students were informed that the monthly rental of the most basic room in the residence was R2000 (based on information on the CPUT website) and that they had to keep in mind that 'everything adds up to the total price of the room'.

In order to elicit respondents' preferences for student housing, the next section of the questionnaire was a conjoint choice experiment. Students were presented with six scenarios which included descriptions of three different rooms in the residences. Respondents had to indicate multiple times their preferences for alternatives within a choice set. The attributes and levels were based on the study by Oppewal et al. (2005) but adapted for use at a South African

university, based on (1) earlier research on housing preferences of students found in the literature; and (2) the input of students during the focus group interviews.

Because it was not possible to present all the possible combinations of features, a fractional factorial design was chosen for the conjoint analysis experiment. A design of eighteen different attribute profiles were presented in six sets of three profiles. For each profile, respondents had to indicate on a scale from 1 to 9 'how much they like or dislike' the accommodation. An example of a profile was given at the start of the conjoint choice experiment as it was felt that this format was not commonly found in questionnaires.

After the experimental tasks, students were asked questions about their current living situation and attitudes, concluding with basic socio-demographic data.

The statistical services unit at CPUT was consulted to check the alterations to the template so as to ensure the questionnaire's reliability and validity.

The questionnaire was piloted with 17 participants who completed the questionnaire in the company of the researcher, to make sure that there were no problems and that participants had no difficulties with understanding the questions.

Data collection

The administration of the final questionnaire took place from early in the second term of 2017. Data was collected through the application of 650 paper-based surveys to residents in CPUT student accommodation, using non-probability purposive sampling. The questionnaires were distributed by real estate student interviewers who were able to explain the measuring instrument to respondents. The last completed questionnaires were accepted on 9 August 2017. This study analyses the 457 usable questionnaires that were returned.

Data analysis and interpretation

The quantitative data collected was analysed with SPSS. Descriptive and inferential statistics were used in the analysis. The data for the conjoint experiment was analysed by applying the general linear model (analysis of variance) using the conjoint results in SPSS software.

1.6 Significance of the research

For academic purposes, this study is offered as a contribution to marketing literature. The measurement of preferences is of importance in many different areas, because the field of marketing is concerned with understanding and predicting consumer preferences in the hope

that such comprehension will result in better managerial decisions (Green & Srinivasan, 1990, as cited in Payne et al., 1992:121). The findings of this research are thus important for managerial applications as well as for marketing practitioners.

Better understanding of students' accommodation preferences is increasingly important in an environment where universities compete for students and have to find new ways to generate income. Therefore, a better comprehension of students' housing preferences could be of value in both the institutional and commercial fields.

A review of the related literature clearly indicates there have been few published studies on student accommodation in South Africa, Africa, and developing countries more generally. This research intends to add to the current body of knowledge, which is mostly derived from research in countries in Western Europe, America and the East, where the student demographics and accommodation systems are very different. As the particular topic of student accommodation preferences has not been researched often, either globally or in South Africa, this research aims substantially to advance understanding of students' accommodation preferences in South Africa.

1.7 Dissemination of research

As the study investigates what students want and what they find attractive in their accommodation, the growing population of university students globally and in developing countries such as South Africa will benefit from research that identifies their specific accommodation needs and preferences.

Housing construction and management is not a core university competency, and the challenges of ageing buildings, student housing shortages and high-cost maintenance make university authorities increasingly turn to the private sector for remedies. In order to involve private developers in building residential accommodation for the ever-increasing student population, universities need an informed basis for decision making.

The results of the study may be of particular interest to private developers when they are designing and planning student housing apartments. New accommodation can be built according to students' preferences and existing ones adapted to better fit their needs. The outcome of this research could also add to the knowledge and understanding of managers of student housing regarding the accommodation preferences of university students. The variables presented in this research are key indicators for marketing managers at student housing companies, when planning their marketing combinations that cater to student housing

requirements. The insight gained from the present research can assist these marketers to better understand what housing features are important to students, how they develop preferences when choosing accommodation, and the similarities and differences among various students' preferences. The findings could thus serve as a guideline for developers and managers of student housing to formulate marketing strategies to promote residential accommodation in ways that appeal to prospective students.

In addition to student housing preferences and choices, this research reviewed the literature concerning housing preferences and choices more generally. The results and the research approach used could thus be applied to other areas of housing research.

1.8 Outline of the thesis

The thesis is divided into six chapters. This current chapter introduces the background and the statement of the problem, the research questions and the aims and objectives of the study. It discusses the research design and methods, and outlines the benefits and significance of the research.

As this thesis is positioned within the larger field of housing studies, next, in Chapter Two, previous research on the subject is reviewed. This includes an overview of the literature relating to the conceptual frameworks that are frequently used in housing preference and choice research.

In Chapter Three student preferences for university accommodation are discussed and situated in both global and local contexts. A gap in the literature is revealed.

In Chapter Four, the method of investigation used to obtain the research data is clarified and the sampling methodology specified. The statistical methods to be applied are described and a rationale for their use is provided.

In Chapter Five the methodological framework of the stated preference approach is outlined.

Next, in Chapter Six, the results obtained from the research are analysed and discussed, to enable the researcher to draw conclusions.

Finally, in Chapter Seven, the data analysis contained in Chapter Six is summarised and the final conclusions of the research presented.

1.9 Summary

This chapter provided a background and justification for the research. The research problem was identified and described. This included notice of the growing shortage of student housing globally and locally, the role players involved and the investment potential. The specific area of concern, namely the quantitative and qualitative shortage of student housing, was clarified, and information to enhance an understanding of the problem was provided. Indications were given as to why the subject of students' accommodation preferences is in fact a researchable problem, and how a more comprehensive understanding of student housing preferences can be achieved. The methodology was described, followed by an outline of the thesis as a whole.

As this thesis on student accommodation preferences is situated within the larger field of housing research, in Chapter Two previous research on the topic of housing studies is reviewed.

CHAPTER 2
HOUSING STUDIES

2.1 Introduction

Chapters Two and Three comprise the literature review in this thesis. These two chapters provide broad, scientifically underpinned insight into the relevant literature. The aim is to evaluate previous research, including the methodologies applied, contextualising the study and identifying where a contribution can be made.

As this thesis is situated in the broader area of housing research, it is important first to outline the most important perspectives applicable in this field of investigation in order to get an idea of the bigger picture and where students' accommodation preferences fit into it.

This chapter therefore commences with an overview of the field of research, establishing the meaning of housing and residential mobility. The perspective will progressively narrow to specific issues in the field (Ahmed & Opoku, 2016:20).

2.2 Housing and behaviour

It is often said that housing fulfils the basic need for shelter while at the same time being the most important item of consumption (Dieleman et al., 1989:457). A house is for most people also a home, and is thus intertwined with family life and other areas of life like education, socialising and work (Dieleman, 1996:203). Garcia-Mira et al. (2005:1) propose that the residential environment as a physical setting is crucial for the well-being of humans as they spend the bulk of their time in buildings, either at home or at work. The importance of studying the role that housing and space play in the quality of life of people is justified by this fact alone. Housing is a complex commodity and a house is an exceptionally heterogeneous product (Coolen & Hoekstra, 2001:295). There is consequently a vast and wide-ranging literature in housing studies.

2.2.1 Housing in context

Housing is a topic with many facets. In the English language literature the word "housing" is both a noun and a verb. Being a material object, housing something that can be produced, manufactured and destroyed. Ruonavaara (2017:178) states that one and the same word in the English language seemingly refers to both the actors' actions and the physical results of their activities.

> There is also another word, “dwelling,” that is both a verb and a noun and also has a rather similar double meaning. It refers both to the people being in and doing activities in their houses and apartments as well as the houses and apartments themselves. So there is quite a lot of complexity in the everyday language concerning what is summarily called “housing”– even if the third, closely related word “home” with its various complexities is not taken into account. In other languages similar double meanings are to be found, as with “logement” and “maison” in French, whereas still other languages make distinctions between different aspects of the housing complex, like “Wohnen” and “Wohnung” in German. (Ruonavaara, 2017:179)

That “housing” and “dwelling” are linguistically ambiguous does not in itself demonstrate the many-faceted nature of housing, but according to Ruonavaara (2017:179) is still indicative of its complex nature.

In this context, housing can be viewed from five different angles (Bourne, 1981:14):

- As a **physical facility**, a unit or structure which provides shelter to its occupants.
- As an **economic good or commodity**, a consumer durable good.
- As a **societal or collective good**, as an element in the social fabric.
- As a **package or bundle of services**.
- As a **sector of the economy**.

In addition to the conventional definitions of a physical facility and an economic good that can be exchanged via a market, housing has numerous comparatively distinctive attributes (Bourne, 1981:17):

- **Fixed location** (or immobility): generally inhabitants move, not houses.
- **Durability**: housing has a long life-span, both as a physical facility and an investment.
- **Limited adaptability**: resulting from the above attributes, housing stock is comparatively slow to respond to shifting demands.
- **Inhomogeneity**: i.e. the diversity and complexity of housing stock and the services it produces, as well as the diversity and large number of purchasers and sellers.
- **Exogenous influences**: housing is extremely sensitive to fluctuations which are external to local markets.
- **Policy overlay:** housing is also subjected to a host of institutional regulations imposed by different levels of government.
- **Externalities**: as acknowledged in the concept of the housing bundle, spatial externalities – especially those involving the character of the close neighbourhood and environment – have a strong influence on what happens to specific housing.

Comprising research in academic and professional disciplines such as sociology, psychology, economics, history, anthropology, planning, philosophy and architecture, the field of housing studies is clearly multidisciplinary. The meaning of dwellings has been explored in a variety of fields, including psychology, sociology, phenomenology and environment-behaviour research. (Ruonavaara, 2017:180). Being a person's major anchor in the environment, a dwelling also fulfils functions such as shelter, security, privacy, status and control (Coolen, 2006:185-186).

As shown in Table 2.1, among articles examined on the topic of housing research, the largest percentage concerned 'attitudes, preferences, satisfaction' (35 per cent), followed by articles on 'housing decisions' (22.2 per cent), whilst 17.9 per cent concerned 'housing markets' (including the economy, affordability and housing development). Other categories include topics such as 'self-perception, well-being and motivation', followed by 'environmental issues' and 'social interaction' (Steggell et al., 2006:18).

Table 2.1: Topics of housing research articles

	n	Per cent
Attitudes, preferences, satisfaction	41	35.0
Housing decisions	26	22.2
Housing markets	21	17.9
Self-perception, well-being, motivation	9	7.6
Environmental issues	8	6.8
Social interaction	6	5.1
Other	6	5.1
Total	117	100

Source: (Steggell et al., 2006:11)

According to Lawrence (2005, as cited in Thomsen, 2008:9), various methodologies, theories and perspectives from a range of disciplines have been applied by researchers in the field of housing. Lawrence (2005) advocates an interdisciplinary approach, in terms of which knowledge from various disciplines is applied to address interdependent factors. This approach is supported by Repko (2008:2), who calls for interdisciplinary study, especially when the topic seems too wide to be dealt with adequately by a single discipline.

As academic interest in housing has increased over the decades, researchers from various disciplines have investigated the field from various angles, using a variety of methodologies and theories. Lawrence (2005, as cited in Thomsen, 2008:9) divides current housing research into two areas: urban and housing politics and sociology, and studies of people and their surroundings. The first category contributes to the understanding of housing supply and demand, and the second category focuses on individual perspectives on housing.

Galster (1996) suggests that the fundamental contribution of housing economics over the decades has been that housing has come to be recognised as a distinctive type of good, making the market for shelter a unique kind of market.

> Housing is a spatially immobile, highly durable, highly expensive, multidimensionally heterogeneous and physically modifiable commodity. These characteristics shape attitudes and behaviours toward housing and, in turn, influence neighbourhood characteristics, mortgage markets, urban growth and decline, and national housing policies. (Galster, 1996:1798)

Clapham (2005, as cited in Thomsen, 2008:9), argues that the meaning of housing in contemporary housing has changed, becoming a means of personal fulfilment and thus accentuating the need to focus on the subjective attitudes of the occupants. Clapham (2005) emphasises the need for housing research to look at both the feelings and attitudes of occupants and the structural factors influencing opportunities and restrictions.

Housing research has become important in the social sciences over the last few decades. Especially in Europe and the Western world this field, including residential mobility and housing choice, has been studied widely (Dieleman, 1996:202). As a result of growing home ownership, the house quite often becomes the household's biggest single investment as well as a source of wealth. Despite the unmistakable trend towards owner-occupation in western Europe, renter occupation is still important in many countries, with variations in tenure structure also being an important area of research (Clark et al., 1994; Clark & Withers, 2007) Housing is typically the dominant item of expenditure in the domestic budget, playing an important role in the lives of individuals and households (Dieleman, 1996:203).

Questions that arise concern why people move and how housing choice decisions are made. These questions are addressed in the next section of the chapter.

2.2.2 Residential mobility

There is a lasting curiosity about why people move (Coulter & Scott, 2015:354). With economists, geographers, sociologist and psychologists alike having contributed comprehensively to the literature, there is a long tradition of study of residential mobility (Dieleman, 2001:249). The classic study by Rossi (1955), *"Why families move: a study in the social psychology of urban residential mobility*", in which he challenges the established views of residential mobility, is cited most frequently. According to Rossi it was a process of adjustment during which families relocated in response to changes in the composition to households (e.g. gender mix, size and age), with housing suitable for one stage of the life-

cycle turning out to be unsuitable at a future stage (Rossi, 1988:14). Rossi claims his greatest discovery was that “residential mobility was based on housing, and that households that could afford to, moved from housing units that did not meet their needs for space and amenities to units that did meet those needs” (Rossi, 1988), challenging the major ideas of classical sociologists at the time. It suggested that residential moves were not an urban pathology, but simply an ordinary part of the family life cycle (Coulter & Scott, 2015:354). Up until then research had mostly dealt with combined mobility patterns, but Rossi (1955) moved the focus to the individual household’s motivation to find an alternative home, influencing the direction that research has since taken (Clark, 1980, as cited in Dieleman, 2001:249). As noted above, the residential mobility process was positioned in the context of housing studies by Rossi, a connection which seems obvious now, but was little recognised then. According Geist and McManus (2008) as cited in Coulter & Scott (2015: 354) Rossi’s insight continues to underpin research on residential mobility.

The article by Brown and Moore (1970), a work focusing on household relocation that also has a strong emphasis on the household decision level, is also often cited.

> They divide the mobility process into two stages. In the first stage, people become dissatisfied with their present housing situation, as changes occur in the household environment or its composition. Stress arises in the present housing situation and eventually leads the household to stage two: the search for a vacancy in the housing stock and the decision either to relocate or to stay in the present eventually leads the household to stage two: the search for a vacancy in the housing stock and the decision either to relocate or to stay in the present dwelling. The authors also consider a situation in which the household, after housing stock and the decision either to relocate or to stay in the present dwelling. The authors also consider a situation in which the household, after the search process, decides not to move because no better alternative has been found. The occupants then either adjust their needs or restructure the present dwelling so that it better satisfies those needs. (Dieleman, 2001:250)

In the classic studies by Rossi (1955) and Brown and Moore (1970) there is a strong emphasis on the household, and the question of how houses and households are matched continues to pervade literature on the topic of residential mobility (Dieleman, 2001:250). Dieleman (2001:251) points to the growing body of literature on the topic of residential mobility, which includes a steady flow of new theoretical philosophies and models. The emphasis in foundational research on the household and how houses and households are matched was re-established by Findlay et al. (2015), Warner and Sharp (2016) and Clark (2017).

2.2.3 Housing preference and choice

In housing research the concepts of preference and choice are often confused. Jansen et al. (2011:2) explain that preference refers to how relatively attractive an item is to a person, with

choice on the other hand referring to the person's actual behaviour. Although preference may well guide choice, the assessment involved in preference could occur even if the choice does not. The distinction between preference and choice is further complicated by the implication that hypothetical choices (e.g. in the Conjoint Analysis method) should not be viewed as expressions of choice, but rather of preference. Jansen et al. (2011:2) go on to say that:

> The most important difference between housing preference and housing choice is that preference is a relatively unconstrained evaluation of attractiveness. In the case of a house, choice will always reflect the combined influences of preference, regulations, availability, market conditions, and internal and external personal factors such as lifestyle and social class. Housing preference might not show a strong relationship with the housing choice actually made. (Jansen et al., 2011:2)

Priemus (1984), as cited in Jansen et al. (2011:2), suggests that factors such as the transparency of the supply side of the housing market, government regulations, household preferences, and the budget of the household could limit the number of realistic possibilities available to households to choose from. Gibler & Nelson (2003:64-76) extend the list by adding factors influencing consumer behaviour, e.g. lifestyle, culture, social class, family, motivation, time constraints, information-seeking behaviour, perception, and reference groups. The household's choice of residence is limited by restrictions such as those mentioned above, and therefore there is often not that much choice at all. Obviously, choice is wider for households with bigger budgets. As a result of these factors, people's "actual behaviour (so-called revealed preferences) often differs substantially from their original preferences (so-called stated preferences)" (Jansen et al., 2011:2).

Garcia-Mira et al. (2005:2) argue that having choices in housing is a privilege that only wealthy people have. Many people in the Third World do not have the luxury of choice, and must be satisfied with simply finding a place to live and a roof over their heads. In addition, Coetzee (2016:31), quoting American research on this topic, reasons that housing preferences vary extensively between communities. Researchers from the rest of the world have also been attracted to this field of study (Dokmezi & Berkoz, 2000; Coolen & Hoekstra, 2001; Dieleman, 2001; Prinsloo & Cloete, 2002; Wang & Li, 2004 & 2006; Opoku & Abdul-Muhmin, 2010; Zinas & Jusan, 2012). Studies emanating from South Africa are few in number. In addition to studies of housing preferences in specific areas such as Potchefstroom (Coetzee, 2016) or Stellenbosch (Shi, 2005), Prinsloo and Cloete (2002) have focussed on housing relocation in South Africa. Prinsloo and Cloete (2002:276) found that socio-economic status influences relocation locally and that South Africans have a preference for areas sandwiched between previously black areas and the central business districts (CBDs), and high-density residential areas in close proximity to the CBD.

With regard to factors influencing housing preference and choice, the literature on residential mobility and choice distinguishes various factors. According to Wang and Otsuki (2015:508) the housing decision depends on three considerations: 1) the nature of the household (e.g. age, gender, educational background, marital status, children, income, assets, housing history, etc., which can also be described as socio-demographic characteristics); 2) housing attributes (including size, location, room type, housing expenditure and location); and 3) macro-economic factors such as income tax and inflation (Wang & Otsuki, 2015).

2.2.3.1 Socio-demographics

In the literature there is abundant information on the household attributes that determine the tendency to move and the choice of a residence (Dieleman, 2001:250). Previous studies on housing preference (Devlin, 1994; La Roche et al., 2010; Amole, 2011; Hoshino, 2011; J Turner Research, 2013; Khozaei et al., 2014; Rugg & Quilgars, 2015) indicate that demographic background is often used in housing research to explain and predict housing preferences. Traditional socio-demographic variables such as age, education and income are widely used to explain and predict housing preferences (Jansen, 2011:177). This was re-established by Findlay et al. (2015).

In housing studies, age is often found to influence housing decisions (Geist & Mcmanus, 2008; Lee & Waddell, 2010), but also level of education (Timmermans et al., 1992), household income (Molin & Oppewal, 2001; Geist & Mcmanus, 2008), employment status (Dieleman, 2001), household composition (Molin & Oppewal, 2001) and gender (Timmermans et al., 1992).

Wang and Otsuki (2015) focus on the factors influencing housing decisions in a study of the housing decisions of young people and students in China. To determine the choice between different residential types, data from a questionnaire survey was analysed using a multinomial logit model. The personal characteristics considered in the study include income, working conditions, local identity and family support. It was found that marital status and monthly income are the most important variables in the choice of housing rent, with money being strongly associated with the younger generation's decisions between sharing and renting housing (Wang & Otsuki, 2015).

Although a study by Jansen (2012) indicates that values have some influence on residential preference and choice, their impact was quite small. Jansen (2012) concludes that socio-demographic characteristics mostly explain residential preference. Other published studies

(Coolen et al., 2002; Heijs et al., 2011, Findlay et al., 2015, Warner & Sharp, 2016) confirm these results.

Johari et al. (2017:4) add that demographics is an important variable in student housing research, whether the study is measuring satisfaction, preferences or other related aspects. In a study of students' residential satisfaction in Nigeria, Amole (2009) found that age, gender, economic status and education level influence the residential satisfaction of students. The results of similar student housing studies will be discussed in Chapter Three.

Besides the individual characteristics which have been found to be important in housing choice behaviour, much research has focussed on the influence of housing features on housing preference and choice. An overview of such findings is presented next.

2.2.3.2 Housing attributes

In literature on residential mobility the main parts of the "housing bundle" – the attributes of dwellings which households contemplate when contemplating a move or choosing a dwelling – have been researched extensively. In the decision-making process the type, size, price, tenure of housing and its location in relation to places of work and services are found to be critical (Molin et al., 1996). Although almost every study uses a different combination of housing characteristics, the price and size of the dwelling are usually the most decisive factors when people choose a place to live (Louviere & Timmermans, 1990; Dieleman, 2001; Lee & Waddell, 2010). The location of the dwelling and related housing expenses are also important aspects, with middle-aged and older people having different needs and preferences from young people regarding city living (Wang & Otsuki, 2015:508).

2.2.3.3 Macro-economic characteristics

In addition to housing attributes and socio-demographics, some studies also take macro-economic characteristics into account (Wang & Otsuki, 2015:508), covering issues such as income tax, housing policies, subsidies, inflation and macro-economic shifts. Reported results indicate that macro-economic characteristics influence choice more in the case of home ownership than in the case of house rental (Bourassa & Yin, 2006, 2008; Wang & Otsuki, 2015). Bourassa and Yin (2006) explain that the reason for this is that macro-economic shifts and income tax affect matters concerning house mortgages and not rental prices (Tazelaar, 2017:31).

2.2.3.4 Revealed preference and stated preference

At the micro level, a distinction that has been developed to analyse the residential mobility process is that between actual choice ("revealed preference") and "stated preference", where people are asked to express their preferences (Mulder, 1996:220). The difference between the revealed and stated preference approaches is discussed in more detail in Chapter Five.

As housing preference and choice have been researched from various angles, the next section examines some of the more frequently used conceptual frameworks.

2.3 Conceptual frameworks

Jansen et al. (2011:3) detail some of the theories informing analysis of housing preference and choice, and these are summarised below. First, clarifying and forecasting residential mobility, there are the life-cycle and life course models. They are followed by the theory of planned behaviour (TPB), a broad theory which models behaviour based on attitude, social norms and perceived behavioural control. Lastly a decision-making model that is explicitly applied to housing is outlined.

2.3.1 Life-Cycle and Life-Course Models

Why people make residential moves has long intrigued researchers (Coulter & Scott, 2015:354). According to Jansen et al. (2011:3), one of the most influential models used to analyse housing mobility is Rossi's (1955) family life-cycle model, revised and extended as the life-course model. According to Rossi in his seminal study, *Why families move*, the "concept of 'dissatisfaction' emerges as a central motivational construct, often triggered with respect to housing needs by an increase in family size" (Fawcett, 1986:8). The various stages of development characterising the nuclear family consist of formation (getting married), having children (expansion), children leaving home (contraction), and dissolution (getting divorced or a spouse dying). Alterations in the state of household circumstances and life paths (people being single, childless, married, divorced, etc.) has consequences for housing choices, both short- and long-term (Wildish, 2015:6). In order to meet the new needs and preferences that develop whilst moving through life, people move house and modify the attributes of their dwelling and neighbourhood (Coulter & Scott, 2015:354).

Dieleman (2001:250) cites Mulder and Hooimeijer (1999) as saying that a person's mobility rate and their stage in the life cycle also show a strong relationship, with young people between the ages of 20 and 35 being the population's most mobile segments in most developed societies. University students, for example, are at a unique life stage in which they move relatively often.

Criticised for being too normative, deterministic and finally incompatible with mobility research (Wildish, 2015:6), the life cycle approach has been superseded by the more holistic life course approach which gives attention to both micro (individuals and households) and macro processes (the housing market and broader society) (Kok, 2007:203).

> This approach is basically a heuristic device to study the interaction between individual lives and social change. It conceptualises lives within the context of society, families and historical time. The life course can be defined as the sequence of positions of a specific person in the course of time. This position can be marital status, parenthood, house in a specific location, employment, etc. Called events or transitions, in a life course analysis the occurrences and timing of changes in positions are studied, mostly in clusters such as birth cohorts. Every life course is characterised by a combination and sequence of transitions, such as leaving home, getting a job, finding a partner and becoming a parent. (Kok, 2007:204)

In contrast to the life cycle approach, which views family formation and development as a "staged progression through an orderly sequence of life events" (Geist & Mcmanus, 2008:283), a life course perspective suggests that it is helpful to view people as "following parallel, intertwining careers in different life spheres: a labour market career, a residential career and so on. An individual's complex system of careers is denoted as a life course" (Mulder & Hooimeijer, 1995:6). In housing choice research, Jansen et al. (2011:4) add that moves might be explained by four careers: "the educational, the labour, the family, and the housing or residential career", and that each of the four careers could be the triggering career for a move, with the others forming the conditional careers. An example would be commencing with a university career, where the implication could be an induced move if commuting is impossible (Jansen et al., 2011:4). From a housing career perspective the housing choice of a student frequently does not equal "maximum utility". Relocation, in order to combine all careers of the people in the household, as Jansen et al. (2011:4) point out, is a "strategic spatial and costly choice", in both the short and the long term.

With life course analysis studying the interaction between life course and economic, demographic, institutional, and social changes, external conditions such as supply-demand market conditions and allocation rules are also taken into account (Kok, 2007:205). Aspiring holistically to grasp individuals' behaviour inside their own networks and in their particular place, society and historical time, the life course approach strongly emphasises time, path dependency and contextuality (Kok, 2007:205). As it involves past experiences, multiple processes, alternative options and ongoing interaction with time and place, according to Kok (2007:221), the life course approach can be used to study demographic behaviour in its true complexity, explaining and predicting residential mobility (Jansen et al., 2011:3). The use of the life course approach as a framework was re-established by Findlay et al. (2015:390).

2.3.2 The Expectancy-Value Model and the Theory of Planned Behaviour

Originally created to explain and predict attitudes towards objects and actions, according to the Expectancy-Value Theory behavioural intentions or attitudes are viewed as a function of:

> (1) expectancy, i.e. the perceived probability that an object possesses a particular attribute or that a behaviour will have a particular consequence, and
> (2) value, i.e. the degree of affect, positive or negative, toward an attribute or behavioural consequence. The model proposes that an attitude is a function of the sum of the expected values of the attributes. (Jansen et al., 2011:5)

The Theory of Reasoned Action (TRA) and its later elaboration, the Theory of Planned Behaviour (TPB), were developed by Fishbein and Ajzen in the late 1970s and early 1980s as expansions of the Expectancy-Value Theory. According to Ajzen (1991:181) the central factor in the TRA and the TPB is the individual's intention to perform a certain behaviour. Thus the theories have been used extensively as models to predict wide-ranging behavioural outcomes conditional on intentions (De Groot, 2011:227).

In the TRA, Fishbein and Ajzen (1975, as cited in Pungwong, 2015:17) posit that the determinants of intentions are both the attitude of the individual towards some behaviour and the subjective norm. The TRA has been used widely in research on consumer purchase intentions (Pungwong, 2015:17). In the TRA model it is assumed that human beings have volitional control over their social behaviour, which as a result can then be predicted from their intentions. However, as it only predicts voluntary behaviour or behaviour over which people have a good deal of control, it is still limited in application. Despite having strong intentions to perform a certain behaviour, some people are not capable of doing so because they do not have the resources, ability or opportunity (Sheeran et al., 2003:394). Madden et al. (1992:3) explain that, to address this issue, Ajzen developed the TBP as an refinement of the TRA, by adding perceived behavioural control (PBC) as a precursor to behavioural intentions. According to Ajzen (2002:666) the construct of PBC was added in an effort to deal with circumstances where people may not have total volitional control over a specific behaviour. That is to say, executing certain types of behaviour, including mobility behaviour, in addition to people's own motivation, also depends on factors that are not within their control (Ajzen, 1991:183). Thus a person's ability to execute their intention of moving is dependent on individual constraints and resources on a micro level, and housing constraints and opportunities on a macro level (De Groot, 2011:227).

In the TPB it is assumed that people select alternatives which offer the maximum benefits with the lowest costs (e.g. social approval and/or money, effort), and their behaviour follows from

the resultant intentions (Gifford et al., 2011:445). Jansen et al. (2011:5) suggest that there are three types of consideration that guide intentions (see Fig 2.1): the first, “attitude toward the behaviour”, has to do with the degree to which the intended behaviour is positively valued (behavioural beliefs). The second, “subjective norm”, is based on normative beliefs (social norms; pressure from referent persons/ significant others to participate in a specific behaviour, combined with the individual’s motivation to go along with these referents). The third, “perceived behavioural control”, reflects an individual’s belief regarding whether or not they are capable of performing that behaviour.

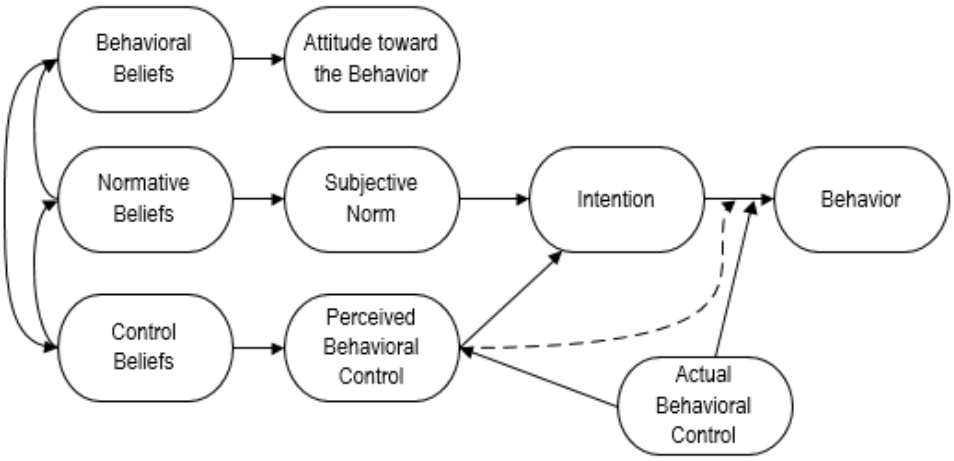

Figure 2.1: The theory of planned behaviour
Source: Ajzen (2015:126)

> According to the TPB, attitude, subjective norm and perceived behavioural control work together to form the behavioural intention to perform the particular action. The intention could result in performing the behaviour, but this depends upon actual behavioural control. In order to be able to act an individual must have an adequate degree of actual control over the behaviour. (Jansen et al., 2011:5-6)

The goal of Ajzen’s TPB is to provide a framework for understanding the determinants of behaviour, to enable researchers to predict intentions and behaviour with respect to the use of and choice amongst products (Ajzen, 2015:125). Many kinds of environmental behaviour, including the choice of travel mode (Heath & Gifford, 2002), and pro-environmental behaviour generally (Harland et al., 1999), has been successfully explained using the TPB (Gifford et al., 2011:445).

Extending the TPB to the sphere of home ownership, Cohen et al. (2009:388) explore factors associated with greater home ownership intentions and actual home purchases, using a 4-

year longitudinal data set of tenants in the USA. The findings of the study provide strong support for the TPB.

The application of the TPB in housing research is confirmed by De Groot (2011):

> The individual's intention to perform a certain behaviour is the central factor in the theory of reasoned action and its later expansion, the theory of planned behaviour (Fishbein and Ajzen 1975; Ajzen 1991). These theories have been widely used as models for the prediction of a wide range of behavioural outcomes conditional on intentions. In contrast to the theory of reasoned action (which is designed to predict behaviour that is considered to be under volitional control; i.e., persons can decide whether or not to perform the behaviour), the theory of planned behaviour is designed to predict behaviour that is not under volitional control. That is, the execution of certain types of behaviour, among which is mobility behaviour, not only depends on a person's own motivational factors but also on factors that are beyond a person's control (Ajzen 1985, 1991; Madden et al. 1992). Whether people are able to put into effect the intention to move depends on individual resources and restrictions at the micro level, as well as housing opportunities and constraints at the macro level. (De Groot, 2011:227)

De Groot also found that a longitudinal rather than the cross-sectional research method is the ideal methodology for this type of research, as it combines evidence of stated intentions and of real relocations for the same respondents (De Groot, 2011:225).

Drawing on Ajzen and Fishbein's (1980) TRA in their chapter "Motivations for migration: an assessment and a value-expectancy research model", De Jong and Fawcett (1981) point out that, as expectations can be measured for different locations (together with the current home), expectancy models are particularly well-matched to the migration topic (Fawcett, 1986:10).

2.3.3 Decision-making approach

While the Expectancy-Value model emphases the content of decisions, largely ignoring the process of making decisions (Fawcett, 1986:10), the focus of the decision-making approach is instead on the process: how individuals make choices about relocating or not, and how they select a destination. This approach to disentangle the basic considerations of how people choose housing, as proposed by Jansen et al. (2011:6), is drawn from the field of behavioural decision theory, where a major objective of researchers has been to understand the nature of human preferences and values and to develop defensible ways of measuring these (Gregory et al., 1993:179). Moving house is seen as a multifaceted problem which has to be solved by using various techniques (Rossi, 1955; Simon et al., 1987). Looking for another house is seen as a process of problem solving during which a solution must be found for a complex and difficult new problem. Jansen et al. (2011) posit that people looking for houses usually do not have well-articulated preferences, and that at least part of the housing preference is formed

during the process of solving the problem. According to Gregory et al. (1993:193) this confirms evidence from behavioural decision research that preferences and values for unfamiliar and complex objects are frequently constructed, instead of revealed, in the process of elicitation. Gregory et al. (1993:179) add that preference-forming is not like archaeology, uncovering what is there already, but is instead more like architecture, constructing a strong value set. The idea of preferences being constructed by people during the process of solving (especially complicated) problems is relatively common in behavioural research (Slovic, 1995:2; Payne et al., 1992:89). In deciding how to decide, individuals ponder over several goals, including reduction of the cognitive effort needed to make choices, minimising experiencing negative emotions, and maximizing the decision's correctness and the ease of justification of the decision. Although people will try to make the most accurate decision for a reasonable amount of effort for any decision, sometimes trade-offs have to be made between effort and accuracy when they choose a strategy. Individuals will use various strategies to make a choice. Sometimes a person will use a compensatory and at other times a non-compensatory strategy, with the use of a specific strategy being contingent on a number of task and context variables. General characteristics of the decision problem, e.g. time pressure and range of alternatives, are task variables. These are not dependent on the specific values of the alternatives in the decision set. In contrast, context variables are linked to the specific values of the choice objects, such as the relationship between attributes. An increase in the use of simplifying heuristics with an increasing number of alternatives is one example of a contingency effect (Payne et al., 1986:3). In decision-making it is implied that the individual's rationality is limited by their information or lack thereof, their cognitive restrictions and the restricted amount of time they have for decision-making. Simon (1991) calls this concept "bounded rationality". Thus, from an economic perspective, decision-makers might not always get to the optimum solution, but they can apply their rationality as soon as they have simplified the available options (Jansen et al., 2011:7).

Jansen et al. (2011:7) further explain that problem-solving is goal-orientated and value-focused behaviour during which individuals endeavour to negotiate certain values and goals when solving their problems. Jansen et al. (2011) distinguish seven stages of problem-solving – (1) recognition; (2) formulation; (3) designing and screening; (4) choice; (5) deliberating about commitment; (6) action; and (7) feedback – and add that, although every solution goes through these stages, problem-solving does not always proceed in an orderly fashion. Some problems seem to move along in a linear manner from stage 1 to stage 7, but there may be iteration back and forth, and the cycle of stages is more complicated than suggested by the sequence. Jansen et al. (2011) propose however that their conceptualisation of the sequence could be a useful framework for analysing the processes of problem-solving and decision-

making with regard to housing choice.

Although the models are described separately, according to (Jansen et al., 2011:3) they have mutual relationships and also influence each other.

2.4 Summary

Chapter Two has reviewed research in the general field of housing and behaviour. But since students' housing choice behaviour is directed towards a specific type of housing, their housing choice behaviour differs from that of other people (Nijënstein, 2012:7). In the next chapter, which examines the literature relating to the research questions outlined in Chapter One, the variables influencing student housing preference and choice behaviour will be discussed.

CHAPTER 3
STUDENT HOUSING PREFERENCES

3.1 Introduction

The previous chapter reviewed research in the field of housing and housing preferences. This chapter critically evaluates previous research on student preferences for university accommodation, situating it within the South African context.

In order to assess the present state of the area of enquiry and how it has developed over time, a comprehensive literature review is carried out, in which old and new developments and initiatives are discussed and similar work in the field is reviewed. The key players are identified and their contributions are analysed.

According to Ahmed and Opoku (2016:20), academic research should be justified by a well-defined research gap and a clearly defined research problem that is strongly rooted in the literature. In this chapter literature relevant to the study is consulted in order to obtain a better understanding of students' accommodation preferences. In order clearly to identify the research gap and raise the level of confidence in the current research by increasing its reliability, the researcher makes use of a variety of resources (journals, conference proceedings, books, reports, etc.), comparing different views and making arguments backed up by citations (Ahmed & Opoku, 2016:21).

The background of student housing globally and locally is outlined and the outcomes of student housing studies discussed. Related studies are analysed and critically evaluated to explore students' housing preferences and put them in a local context. With the study being conducted at a university in Cape Town, South Africa, the research draws on current practices and progress internationally, before narrowing the focus appropriately (Ahmed & Opoku, 2016:20).

3.2 Student housing

3.2.1 Student housing definition

Fogg (2008) as cited in Ijasan and Ahmed (2016:134) defines student housing as "any housing that is solely intended to provide accommodation for students attending college or university, [creating] an environment where social connections, independency and learning to live with other people take place".

Student housing can generally be divided into two categories: purpose-built student accommodation (PBSA) and a house in multiple occupation (HOM). Usually PBSA developments are all-inclusive complexes in which students are provided with facilities such as laundry, parking and convenience stores (Kenna, 2011, as cited in Ackermann & Visser, 2016:8-9).

3.2.2 Student housing globally

As noted in Chapter One, as a result of increased student numbers and the continuing expansion of higher education institutions, student housing has experienced rapid growth worldwide over the past two decades (JLL, 2016:5). Providing and developing student housing has been challenging for many university cities, not only in countries in the Western world (Thomsen & Eikemo, 2010:3) but across the globe (JLL, 2016:5). According to Macintyre (2003:117), the growing market for student housing is a trend that is likely to continue world-wide, with global university student population growth consistently outstripping higher education institutions' (HEIs') supply of accommodation. The policy of governments not to invest in more student accommodation means that students have been forced to look for accommodation in the private sector.

In this context research has increasingly focussed on student housing (Thomsen & Eikemo, 2010:3). Student housing research covers a wide variety of areas (Khozaei et al., 2014:710). Studies in the field include those by Rug et al. (2000, 2002), Thomsen and Tjora (2006), Thomsen (2007), Amole (2009, 2011), Hubbard (2009), Khosaiei et al. (2010), La Roche et al. (2010), Thomsen and Eikemo (2010), Jansen et al. (2011), Muslim et al. (2012), and Abubakar et al. (2015).

Within the UK context, Rugg et al. (2000:vi) draw attention to how the inability of HEIs to accommodate increasing student numbers has resulted in students becoming more reliant on the private rental market. As a consequence, niche markets that cater specifically for the needs of students have developed in certain areas. One of the characteristics of the student niche market is its robustness: during times when the property sector in general declined, students continued to compete for property, and leasing to students often retained its buoyancy (Rugg et al., 2000:3).

With low vacancy rates and high rates of return guaranteed by high student demand for rental properties, properties aimed at student rentals have become popular options in the buy-to-let market. Properties in close proximity to universities which are suitable for conversion have become sought after by landlords and letting agencies throughout the UK. Rugg et al.

(2002:294-295) do caution, though, that leasing property to student households differs markedly from leasing to other types of tenants.

Hubbard (2009:1903) confirms the increasing significance of shared off-campus rental housing in the UK. He nevertheless notes that, against the background of higher education continually expanding and private investment capital's increasing involvement, privately managed new-build developments are becoming more popular. Hubbard's research draws on housing surveys and interviews conducted with students in the UK, and concludes that changing student demands seem to be encouraging a move away from houses in multiple occupation (HMO) in the direction of purpose-built accommodation (PBA).

In addition to demand studies such as one by the University of York, various market researchers in the United Kingdom, for instance JLL (2012), Savills (2016) and Knight Frank (2016) have confirmed that student housing has become a new asset class.

In the Netherlands student demand has been investigated for decades, and annually since 2012 by the "Landelijke Monitor Studentenhuisvesting" (Kences, 2015). With investor interest in student housing in the Netherlands rising, companies such as CBRE publish special reports on student housing to provide more insight into the local student housing market (CBRE, 2015).

Many such studies are post-occupancy surveys focussing on students' observations about their existing environment and factors that affect their satisfaction (Khosaiei et al., 2010; Thomsen & Eikemo, 2010). According to Khozaei et al. (2014:710), reviewing these studies nevertheless reveals that student housing preferences are not researched very often, particularly not in developing countries.

Across sub-Saharan Africa (SSA) the number of student enrolments has been an increasing at an extraordinary rate, with the tertiary gross enrolment rate rising from 4.3 per cent to 8.2 per cent in the period 2000-2014. In combination with a growing tertiary-aged population, this trend indicates that the demand for new purpose-built student housing will impact hugely on the property market (JLL, 2016:3). Donaldson et al. (2014:176) note that student accommodation has been identified as a niche market by the private sector. Understanding how students make decisions, and the factors influencing this, should be of significance for housing developers, government institutions and real estate agents. Researchers in the field will also be able to take advantage of the results.

This study focusses on students of Cape Peninsula University of Technology in Cape Town, and it seeks to contribute to a fuller understanding of the housing preferences of this specific group.

3.3 Student housing preferences

This section deals with literature on university students' preferences in respect of accommodation, starting with studies in developed countries and moving on to the situation in developing countries, including South Africa.

3.3.1 Student housing preferences in developed countries

Angelo and Rivard (2003) identify six key student housing trends in the USA with the use of expert interviews. These trends are depicted in Figure 3.1.

Figure 3.1: Six key trends in the student housing market
Source: Angelo and Rivard (2003)

The first trend is to privatise student housing, moving the ownership from government to private entities who develop, manage and maintain the PBSAs. The second trend is live and learn, which refers to a university residence hall or residential learning community, a village of a kind, specifically and exclusively for students. Quite similar to the on-campus concept in Europe, these residential learning communities impact positively on the social cohesion between students. The third trend, safe and secure, is a particularly important trend for international students (and their parents), who are unfamiliar with the city where they are going to study. The fourth trend, called go green, has become fashionable in student housing because of the characteristics of green buildings. In addition to the positive impact living in a green building or environment seems to have on the well-being of people, they are politically correct, environmentally friendly and money-saving over the long term. Privacy, the fifth trend, indicates that students want greater privacy and autonomy in their housing than used to be the case. Students more and more prefer to live in apartment-like residence halls where they

have their own rooms, but into which other facilities such as living rooms, a kitchen and a bathroom are incorporated. Luxury, the last trend, means that students increasingly expect facilities such as a pool, a fitness centre, a games room and a clubhouse (Angelo & Rivard, 2003:24-30).

These trends in residence halls in the USA are confirmed in expert interviews by Herman Miller Inc. (2007), whose report also points out that the appeal of the residence hall plays a large role when it comes to the recruitment and retention of students. A survey of college students across the USA by the APPA's Center for Facilities Research (CFaR) indicate that residential facilities rank second in importance only to facilities relating to specific majors (Herman Miller Inc, 2007:2). Students lead busy lives on academic, extracurricular, cyber and social levels, and they want their own things in their own spaces. It is important to be aware that students come to university with laptops and mobile phones as "essentials" that are integrated into their lives and require connectivity. According to College Planning and Management magazine in the USA, all new residences built in 2000 had internet access in students' rooms as wireless internet access has become a basic necessity (Herman Miller Inc, 2007:4). The report by Herman Miller concludes by pointing out that, in addition to technology, students expect laundry facilities, security systems, air-conditioning, fitness rooms, coffee shops, satellite dining facilities, convenience stores, as well as common spaces that blend studying and relaxing.

The results of a survey by La Roche et al. (2010) that examines the housing preferences of Longwood College students in the US confirm the six trends evident in campus housing (Angelo & Rivard, 2003). The students surveyed rejected traditional dormitory living and had high expectations regarding their privacy as well as state-of-the art amenities. Students ranked "security" as the most important consideration in choosing accommodation, followed by proximity to campus and cost. For the majority of respondents, "deal breakers" in the housing decision included: no Internet access (92.9 per cent), no laundry facilities on the premises (84.9 per cent), no cable TV (75.7 per cent) and no kitchen (57.4 per cent). Sharing a bedroom was a "deal breaker" for approximately half the students (49.3 per cent), as well as twin beds (42.1 per cent), but surprisingly, sharing a bathroom was a deal breaker for only 11.7 per cent of respondents. The results also suggest that there is little difference in preferences between male and female students.

In a study of 152 respondents at the University of Surrey in Guildford, England, Poria and Oppewal (2002) aimed to investigate students' preferences regarding their university accommodation. Among other things, the students had to indicate "their willingness to pay

(WTP) to upgrade various elements of their room and living area". The results indicate that students are prepared to pay more for features relating to privacy, followed by aspects relating to convenience. Differences were found between students based on gender and where they had spent most of their lives, with females showing greater WTP for privacy-related attributes and students from England being prepared to pay more for a bigger kitchen (Poria & Oppewal, 2002:116). The authors speculate that students who had spent most of their lives in England perceived the kitchen as an area in which to socialise, as they commonly mentioned it as the place to gather in the evening for drinks, whilst students from Europe saw the kitchen more as a space for preparing food. No differences corresponding with students' religion or course of study were found (Poria & Oppewal, 2002:125).

As part of the same survey at the University of Surrey, Oppewal et al. (2005) used a stated preference experiment to determine how room features influence students' preferences regarding university accommodation. Students were presented with six scenarios, including descriptions of three different rooms in the residences. They were asked to indicate how much they liked or disliked the room on a scale of 1-9 for each of the descriptions. The results obtained by Oppewal et al. (2005:114) show that students were most sensitive to whether they needed to share bathroom facilities with other students, and to the distance of their accommodation from campus, followed by room size, the mix of gender and the mix of postgraduate vs undergraduate students on the residence floor. The view from the room had lesser importance, and weekly rent was an unexpectedly minor consideration (Oppewal et al., 2005:122). Although this could indicate that students were prepared to pay considerable amounts for improvements to their rooms, the researchers were cautious to draw this conclusion without further evidence. Possible explanations could be that students ignore the value-cost "trade-off" when expressing their 'liking' for the accommodation profiles, or that they are not primarily concerned with rent as parents often pay for it. Oppewal et al. (2005) are of the opinion that the results of their study can assist in the design and planning of new student housing, e.g. making accommodation more attractive by providing private facilities, a bigger room and perhaps a more pleasant view from the window. Their results are based on a survey at one university, and thus cannot be generalised without further research in other settings.

In a quantitative study on student housing preferences at the University of Nottingham (Survey Unit, 2008) a total of 5310 responses were received. Although the study is very wide-ranging, taking into account a lot of aspects, a few of the results are relevant to this current research. The results indicate that "broadband and telephone connection in study bedrooms" ranks as the top preference expressed, followed by value for money, the opportunity for social cohesion and a safe living environment (Survey Unit, 2008:5).

Nijënstein et al. (2015) researched students' housing preferences at universities in Tilburg and Breda in the Netherlands. To predict heterogeneity in housing preference and choice behaviour, the study invoked subjective values rather than demographics. In the conjoint experiment imaginary student apartments are described by methodically varying nine housing characteristics: "price, size, kitchen sharing, bathroom sharing, cycling time to city centre, cycling time to campus, outdoor space, walking time to supermarket, and walking time to park". Students were requested to choose the most preferred housing from multiple sets of two student houses. The results of the Nijënstein et al. (2015) study indicate that there is heterogeneity in students' housing preferences, and that the differences can be explained to a certain extent by socio-demographics and human values, with the latter giving additional insight over and above socio-demographics. The sample in this study only included students in two cities in the Netherlands, and the authors were reluctant to generalise the results across cities and student groups (Nijënstein et al., 2015:215). The research nevertheless adds to the findings of an earlier housing demand study by Jansen (2012) which indicated that, although values can be used to predict housing preference and choice, the relationship is fairly limited and that socio-demographic characteristics remain more reliable as predictors of residential preference and choice (Nijënstein et al., 2015:199).

Responding to the lack of research on students' housing preferences, Verhetsel et al. (2016) carried out a study in Antwerp. Their results indicate that all the features included in the survey influence students' housing choice. However, the most important characteristic in the selection process is the type of housing (e.g. student house, residence, studio flat), followed by rent and size. Of less importance are the distance to campus and presence or absence of furniture. Regarding type, a studio apartment is most preferred and sharing a house with a landlord is the least preferred option. Thus the results point toward a strong preference for private facilities. There is still heterogeneity in students' housing preferences, though, and priorities differ among students. According to Verhetsel et al.'s (2016) study, there still is a future for traditional types of student housing. But students prefer private facilities and, despite being more expensive, flats are most popular. Verhetsel et al. conclude that private developers are responding to students' housing preferences with high standard student housing projects that are easy to construct, maintain and organise. As noted, though, their research indicated a continued demand for diversified student housing (Verhetsel et al., 2016:448).

Tazelaar (2017) conducted a survey in the Netherlands to determine the residential preferences of young people. This included determining the willingness-to-pay for housing-related and building-related facilities for young people, and the research included students,

young professionals and expats. A choice experiment was executed in an online survey in which 513 young people were consulted. The respondents were presented with 12 choice sets, each with 2 housing alternatives covering the following features: size, price, dwelling division, washing machine, dishwasher, type furniture, insurance package, common area, bike sharing, and leisure activities. The results show that size and price are the most important considerations for students making a housing decision. The results also show that there are differences among different socio-demographic groups, with size being the least important feature for students in comparison to other groups. Whilst women are more concerned with the size and division of the dwelling, the price of the unit is more important to men (Tazelaar, 2017:8).

Some of the studies on student housing preferences in the United Kingdom and Europe have been summarised in Table 3.1, below. This Table is followed by Table 3.2, showing student housing preferences in developing countries, discussion of which ensues afterwards.

Table 3.1: Student housing preferences in developed countries (including the UK, the USA and Europe)

Authors; Publication date; Location; Sample n	Main research question/ Aim of study	Research design/ Method	Main findings
Poria and Oppewal, 2002 University of Surrey, Guildford, UK n=152	To identify students' preferences for room attributes based on their willingness to pay.	Using willingness to pay (WTP) as an evaluation technique. Participants were asked to estimate how much more they would be willing to pay to upgrade a room attribute. Semi-structured interviews followed by questionnaire distributed at halls of residence. Results subjected to bi-directional analysis and all analyses subjected to parametric and non-parametric tests.	Students are ready to pay more for upgrading attributes relating to privacy (not sharing their room, not sharing ablution facilities), followed by attributes relating to the student's convenience (number of people sharing ablutions, size of room, number of people to a floor), and finally factors linked to students' social environment. Students are not a homogeneous group: Age was linked to preferences, with younger students ready to pay more than older students for all attributes mentioned. Clear differences found among students based on gender, with female participants showing a greater willingness to pay for privacy-related attributes than male participants. Regarding kitchen size, students who had spent most of their lives in England were prepared to pay more than students from Europe.
Oppewal et al., 2005 University of Surrey, Guildford, UK n=152	How room attributes influence student preferences towards university accommodation How students compare, or trade off, the importance of one attribute with others	Stated preference experiment. Eight attributes were selected: mixed or single gender floor, mixed or single course floor, sharing of toilet and shower, view from the room, size of the room, distance from campus, age of building, rent per week. Fractional factorial design. 18 profiles were presented in six sets of three profiles.	Students were found to be most sensitive to whether they need to share shower and toilet facilities with other students and how far their accommodation is from campus. Room size (four versus nine square meters) was next most influential, followed by mix of gender and mix of undergraduate and postgraduate students on the respondent's floor in the building. The view from the room had a smaller but still significant effect. Weekly rent had a surprisingly small effect.
Survey Unit, 2008 Nottingham Trent University (NTU) and The University of Nottingham (UoN) N=5 310	To identify the residential preferences of students at Nottingham's universities.	Web survey; quantitative research methods to analyse the data. Research very broad taking into account a lot of aspects.	Relevant to this research, students expect/ want: • Top feature: good internet/ television/ telephone connection • On-site management, technical and financial • Value for money • Social cohesion and creation of new friendships • A safe living environment
La Roche et al. 2010 Longwood University, USA n=325	To determine the housing preferences of the Longwood student	Student housing preference survey. Ranking preferred amenities.	Students overwhelmingly reject the traditional dormitory as a housing option, indicating their expectations of privacy and state-of the art amenities. When ranking important considerations in choosing housing, security was ranked first, followed by proximity to campus and cost. "Deal breakers" in the housing decision included: no Internet access, no laundry facilities on premises, no cable TV

Verhetsel et al., 2016 University in Antwerp, Belgium n=1047	What are the preferences of students regarding communal living facilities, location, size, cost, housing type and design, Their WTP for these attributes Relative importance of private vs shared amenities	Stated preference experiment. Six relevant attributes: rent, distance to the campus, shared or private facilities, building type, size of the room and whether or not the room is furnished; 22 choice situations of two alternative student housing accommodations, termed “profiles”; Bayesian D-optimal partial profile designs which take into account prior knowledge concerning the respondents’ preferences	All attributes of the stated preference experiment influence students’ choice of housing. The type of housing (e.g. student house, residence, studio flat) is the most important attribute in the selection process, followed by the rent and the size of the room. The distance to the campus and the presence or absence of furniture are relatively less important. With regard to the housing type, a studio flat is most desirable, while a room in a house shared with the landlord least desirable. Private facilities are high on the wish list. Therefore, we conclude that cohousing with shared facilities appears not to be the first choice among the Antwerp students. Nevertheless, heterogeneity is present in the housing preferences of students. The priorities regarding the attributes and their levels might differ among students. Willingness to pay of university students is significantly lower than that of university college students who study one or two years fewer. Consequently, the demand for a diversified student housing market will presumably persist.
Tazelaar, 2017 Dutch University cities n=513	What are the residential preferences and WTP for both housing-related and building-related facilities of young people, including students, young professionals, and expats?	Stated choice experiment; 12 choice sets, each including 2 housing alternatives and an option ‘none of these’; Attributes cover size, price, dwelling division, washing machine, dishwasher, type furniture, insurance package, common area, bike sharing, and leisure activities; Online survey; data analysed by Multinomial Logit Model	Size and price are most significant factors for all young people, including students when making a housing decision. There are differences in preferences among different socio-demographic groups. Size is the least important attribute for students compared to young professionals and expats, while price is the most important attribute for students compared to other groups. The results show that there are also differences in preferences between males and females. Whilst the size and division of dwelling are more important to women, the price is more important to men. People from different nationalities, Western and non-Western people, almost share the same preferences. Model estimated WTP in euros for all attributes included in choice alternatives in survey.

Table 3.2: Student housing preferences in developing countries

Authors; Publication date; Location; Sample n	Main research question/ Aim of study	Research design	Main findings
Amole, 2011 Four Nigerian Universities n=1124	What are the housing preferences of students in southwestern Nigeria? Which student characteristics significantly influence preferences for housing?	Stated Preference. Student preferences for 7 dimensions of housing were examined: (1) type of bedroom, (2) whom to share with, (3) sharing size for kitchenette, (4) sharing size for bathroom, (5) which floor to live on, (6) the balcony, and (7) where to study. In addition, 8 characteristics that discriminated between the students' preferences for each dimension were examined. Results were analysed using frequencies, bivariate analysis (BA) and discriminant analysis (DA).	Results show, first of all, that what most students prefer is within what they could reasonably expect. There was also a distinct gap between what students preferred and what they had. Students' preferences also seem to be for more privacy. They wanted to share the facilities with fewer people, live on higher floor levels, and study outside the bedroom.
Khozaei et al., 2011b Universiti Sains Malyasia (USM), Penang Island, Malaysia n=752	1) What is the degree of students' preference for specific facilities in residence hall? 2) What are the most 5 preferred facilities in residence hall? 3) Are there any differences among gender, nationality, race and study level in the facilities and amenities preferences?	Stated preference. Case study conducted at residence halls. Self-administered structured questionnaire. Students were asked to indicate their preferences on a four-point scale from not at all (1) to very much (4) on each statement. The facility and amenity factor consisted of 22 items. Internal consistency of measures was assessed using Cronbach's alpha.	Free internet access, lockable storage space, mirror inside student's room, water machine and variety of food in food stall were the five most preferred facilities in the residence halls. Additionally, facilities such as a kitchen, laundry monitoring system and 24h available taxi were of interest to students. The research further uncovered a significant difference among male and female students, race and study level on their degree of preferences. Undergraduates, Chinese, and female students reported greatest preferences for all types of facilities and amenities. No significant difference was found in the preference mean scores of students of different nationalities.
Khozaei et al., 2014 Public University in Malaysia n=752	To identify student's preferences for some important attributes of residence hall design and to highlight the differences and	Stated preference. Case study. Students had to indicate their preferences rating a 4-point scale. Students' preferences for residing in traditional and suite-style residence halls, single room and double room as	Students strongly prefer residing in suite-style to traditional residence halls, a single room with shared bathroom is also preferred to double-sharing room and a room in which each student's area is marked clearly. There are significant differences in students' preferences based on their gender, nationality and study level.

	similarities in student's preferences.	well as rooms in which each student's area is marked clearly. Data were analysed using PASW Statistics 17.	
Zortuk et al., 2014 University in Kütahya, Turkey n=343	An evaluation of higher education students' apartment preferences with respect to multiple criteria. Aimed to find out the importance rankings of these criteria and determine the optimum apartment option.	Conjoint analysis. Six attributes: location, renter, room, price, floor, age Sixteen apartment profiles with different combinations of attributes. Pearson's R and Kendall's tai	Number of rooms, price and location attributes have the greatest influence on students' decisions and these are followed by age, floor and renter attributes. The optimum apartment option is a central, 0-5 years aged, 3 bedroom and 1 living room apartment, rented by the householder with a price of 300-400 Turkish Liras.
Shehper, 2015 Lahore School of Economics , Pakistan n=120	1) What are the important attributes that students are looking for in an apartment? 2) How do students develop preferences for choosing an apartment?	Conjoint analysis. Respondents select an apartment based on six attributes such as walking time to the class, noise level of the apartment, safety of apartment location, condition of apartment, size of living/dining area of an apartment and monthly rent. Each attribute has three levels. Pearson's R and Kendall's tai	Students give the maximum importance to less walking time to class from the apartment, while monthly rent is the next most influential attribute. On the other hand, noise and safety levels have almost equal importance, whereas students attach less value to the area size of the living and dining area, for them a relatively minor factor in choosing an apartment.
Ijasan and Ahmed, 2016 Two universities in Johannesburg n=250	To determine whether there is a divergence in the needs and preferences of international students from those of local students.	Mixed method design: initial semi-structured interviews followed by surveys and finally interviews to validate findings. Thematic analysis Pearson's r correlation coefficient	There are statistically significant differences between the accommodation needs and preferences of international and local students. There also seems to be a lack of awareness or willingness to act on the part of developers in this regard.

3.3.2 Student housing preferences in developing countries

Very few studies have been conducted in developing countries, where the prior housing experience of students is very different from that of students in the developed world (Amole, 2011:45). Policy makers, architects and higher education managers in the developing world have simply been replicating housing designs and policies originating from elsewhere.

In Nigeria the sharp drop in government funding to universities has necessitated investigating alternative student housing policies, including involving private developers to build student housing for the growing number of students. Research by Amole (2011) aimed to identify the housing preferences of university students in Nigeria and the characteristics that notably influenced these preferences. The results of the research are intended to assist designers and managers of student housing in Nigeria. The study investigates preferences for seven housing aspects, including: (1) type of bedroom they would like (single, double, three-person or more), (2) whom to share with, (3) sharing size for kitchenette, (4) sharing size for bathroom, (5) which floor to live on, (6) the balcony and (7) where to study (Amole, 2011:51). In addition the study also identifies from literature (e.g. Oppewal et al., 2005) eight student characteristics that could influence housing preferences, namely age, gender, level of study, economic status, course of study, and residential experience.

The results show that what most students prefer falls within what they can reasonably expect. Most undergraduate students prefer a double bedroom, which is not surprising as half of the students in the study did not have a single bedroom at home. Most postgraduate students, on the other hand, prefer a single room, although the results indicate that student characteristics such as gender, course of study, and previous hostel experience cannot predict preference for type of bedroom. Regarding bathroom facilities, the study confirms the results of Oppewal et al. (2005), that students are sensitive to sharing sanitary facilities. The findings also indicate that it is more important to share the kitchenette with fewer people than the bathroom, suggesting that cooking is a more private activity than going to the bathroom for students in Nigeria. In this particular regard there appears to be a distinct gap between what students prefer and what they have. Students prefer to share the kitchenette with less than five people, but at the time of the study the sharing size was sixty. Surprisingly, gender has no effect on preference for sharing the kitchenette (Amole, 2011:51). Students' preferences are for more privacy, to share facilities with fewer people, to live on higher floor levels (because fewer people use the upper floors), and to study outside the bedroom (undergraduates only). Unsurprisingly, most students prefer to have a

balcony attached to the bedroom. The characteristics that predict student preferences are the level of study, age, economic status, course of study; and those that define the students' residential experience, namely the length of stay, sharing experience at home, and previous hostel experience. Level of study is the most discriminating variable in bedroom preference and the sole predictor of where to study, confirming the results of a previous study by Oppewal et al. (2005:121). The characteristics that were also found to be predictors of preference include length of stay, sharing experience at home and previous residential experience. Economic status is only a predictor of the type of bedroom preferred, and course of study does not influence any housing dimension other than on which floor to live. Surprisingly, gender does not emerge as a predictor of preference for any of the housing dimensions, again corroborating results reported by Oppewal et al. (2005). This can perhaps by explained by the life cycle stage of the respondents.

The results of this study show that the characteristics of users are weak predictors of preference, and that additional factors will better explain why students' preferences differ. The study also confirms the results of previous studies by Amole (2009, 2011) showing the bedroom to be the most important dimension in students' housing preferences. According to Amole's 2011 study, it appears that, as most writers have found, preference is contextual. Comparing the results of this study with findings in other socio-cultural contexts and different age groups, there are clear differences. Preferences regarding where to study and on which floor to live appear to be influenced by students' current living experiences (Amole, 2011:53).

The main purpose of a study at Universiti Sains Malyasia (USM), Penang Island, Malaysia, by Khozaei et al. (2011b), was to "explore the degree of university residence hall students' preferences for some facilities and amenities". A further aim was to find out whether there were significant differences in students' preferences with regard to gender, nationality and study level. The results indicate that free internet access is the most preferred facility in residence halls (Khozaei et al., 2011b:7336). According to the authors the importance of internet access from the perspective of students might be because of the key role that the internet plays in various aspects of students' lives, e.g. in their studies, research and communication. The results of this research confirm the results of various other studies that emphasise the importance of internet access in daily life, for different types of people, including office workers, travellers and students. Internet access is followed by lockable storage space, a mirror inside students' room, water machine and a variety of food in the food stall. The study also highlights the importance of other specific facilities from the students' perspective. Furthermore, the research uncovered significant differences

among student preferences between males and females, race and study level, but found no significant difference between students of different nationalities.

Further research was conducted, in the form of a case study by Khozaei et al. (2014) at a public university in Malaysia, to gain a clearer understanding of students' housing preferences in developing countries. The main aim was to identify university students' preferences for important aspects of residence hall design, and to highlight the differences and similarities among the preferences of students. The results indicate that students have a preference for residing in suites instead of traditional residence halls, confirming the results of La Roche et al. (2010) in the Longwood College study. Significant differences were found in students' preferences based on gender, nationality and study level.

Zortuk et al. (2014) investigated the apartment preferences of 343 students in Kütahya, a small city in Turkey. In the study, apartment alternatives were evaluated in terms of multiple criteria to determine the importance rankings of these criteria and discover the optimum apartment option for students. Conjoint analysis was the main methodology in this study, with students being required to rate sixteen profiles. According to the importance scores, rooms, price and location are the most influential factors in students' decisions, followed by age, floor and renter.

A summary of student housing preference studies in developing countries is presented in Table 3.2, above.

The research referred to thus far in this literature review was conducted in Western countries, in the East as well as in a few developing countries, including Nigeria. The next section looks at student housing in South Africa.

3.3.3 Student housing preferences in South Africa

In South Africa there are three stakeholders in the student housing market, namely the government, universities, and the private sector (Schooling, 2015). Commercial interest in the South African student housing sector was only aroused after the publication in 2011 of the "Report on the Ministerial Committee for the Review of the Provision of Student Housing at South African Universities" by the Department of Higher Education and Training (DHET) (Rensburg, 2011). For the first time society became aware of the size and severity of the student housing shortage.

In the light of the shortage of student accommodation the DHET in 2015 gazetted a policy on standards of student accommodation. In order to provide more and improved student accommodation, close to R1.7 billion was allocated for student housing projects (Mahlaka, 2016).

The increase in the tertiary student population in South Africa and the resultant shortage of adequate residential accommodation for students have necessitated research in the field. However, with the exception of studies by Benn (2010), Donaldson et al. (2014), Ackermann and Visser (2016), and Ijasan and Ahmed (2016), little evidence of academic research on student housing was found. What is more, most of these studies focus less on student housing preferences than on the global phenomenon of studentification. The study by Benn (2010) focuses on the impact of studentification in Stellenbosch. The author suggests that attention should be given to more sustainable integration of student accommodation in the town and that public policy and the role that it plays in regulating studentification in Stellenbosch should be reviewed. A study by Donaldson et al. (2014) expanded on Benn's study by investigating studentification in both Stellenbosch and Bloemfontein, providing an improved understanding of the effect of studentification on the reshaping of urban space (Donaldson et al., 2014:S176). Ackermann and Visser (2016) further developed the contributions of Benn (2010) and Donaldson et al. (2014) by making a further study of studentification as experienced in Bloemfontein. Due to the lack of PBSAs in this city, the investigation focusses primarily on HMO student housing, drawing attention to the economic, socio-cultural and physical impacts of student housing on host locations (Ackermann & Visser, 2016:2). The location indictors for students choosing a particular student house are not surprising, with students rating neighbourhood safety first, followed by affordability and distance from campus (Table 3.3). The results to some extent confirm the locational findings of Benn (2010:81), although in Benn's study proximity to campus is indicated as the most important reason for choice of a dwelling, followed by the proximity of friends, being independent, neighbourhood safety and affordability. As described in the literature (Charbonneau et al., 2006:291,295), the walking distance to campus appears to be of key importance to students in their choice of a dwelling, followed by rent and dwelling quality (Garmendia et al., 2012). However, the decision making is complex, involving trade-offs between distance and other housing attributes (Charbonneau et al., 2006:278). Ackermann and Visser (2016) point out that there are a number of role players in students' decision making about accommodation. Most contracts are for 12 months, and this is a year-long commitment for both the student and those who actually supply the finance to support it. With the vast majority of parents or guardians of students actually being responsible for payment of the rent, they also play a big role in choosing

the accommodation. Other role players are friends, estate agents as well as the owners and managers of properties (Ackermann & Visser, 2016:10-11).

Table 3.3: Location indicators for students in Bloemfontein

Location Indicator	Rank
A safe neighbourhood	1
Affordability of accommodation	2
Distance of house from campus	3
Living an independent lifestyle	4
Friends who live there	5
Socio-economic status of the neighbourhood	6
Student life in the neighbourhood	7

Source: (Ackermann & Visser, 2016:12)

A study by Ijasan and Ahmed (2016) conducted at two universities in Johannesburg highlights the key housing needs of international students locally (Table 3.3). The study reveals that there are statistically significant differences between the housing needs and preferences of international and of local students (Ijasan & Ahmed, 2016:132). Whilst communal living is more customary with local students who, in comparison to international students, share more facilities, international students seemingly want to have facilities for their sole use and spaces to themselves. Perhaps partly because most international students are more mature students they detest the thought of shared facilities or communal living. International students also prefer to live in flats and apartments rather than town houses, possibly for security reasons. Other privacy issues of importance to international students are noise insulation and en-suite baths and toilets. Local students desire entertainment spaces such as TV rooms to a greater extent than international students. Another issue is the diverse food needs of international students (Ijasan & Ahmed, 2016:144-146). Because the conclusions reached in this study are drawn from a limited set of observations (n=250), the results are not generalisable. However, they are notable indicators of the factors that affect the housing needs of international students in Johannesburg.

3.4 Summary

This chapter provided a context for understanding the importance of student housing preferences by reviewing the relevant literature. Despite the important role that housing plays in a student's overall development, not many studies on student housing have been found. And among these studies, there are surprisingly few in which student preferences regarding their living space(s) have been investigated. Moreover, most of the studies have been conducted in Western countries

(Amole, 2011:45) and, notwithstanding the importance of South Africa's student housing market, little evidence of research into the accommodation preferences of local students has been discovered.

Finally, although there is some coverage of the residential preferences of students internationally, housing decisions and preferences have been found to vary among countries, and the results of research abroad may not apply directly to the housing market for students in South Africa. In the circumstances, this study could be considered innovative and of considerable potential importance to stakeholders in the field of real estate.

Chapter Four offers an account of the research methodology, including the methods used to collect and analyse the relevant data.

CHAPTER 4
RESEARCH METHODOLOGY

4.1 Introduction

The previous chapter canvassed research previously conducted in the field of student accommodation preferences. From the literature reviewed, it emerged that there has been a fair amount of research on student accommodation, but little work on students' accommodation preferences. Not much is known about students' real needs and requirements (Khozaei et al., 2011:300), as investigation of the topic has been limited, particularly in developing countries (Khozaei et al., 2014:710). However, as a literature review at best only summarises and organises existing literature, the insights gleaned still have to be tested by empirical study (Mouton, 2009:180). This chapter describes the research protocols and methodology adopted to explore the accommodation preferences of students.

The chapter commences by discussing methodological aspects relating to the research as a whole, after which the structure of the research methodology is described. According to the 'research onion' model (Saunders et al., 2009) this involves detailing the research philosophy, approach and techniques, including sampling and data analysis.

Research methodology is the theory and analysis of undertaking a research study (Carter & Little, 2007:2). By articulating a research methodology, the researcher enables others to see what s/he is trying to establish, or why a particular piece of research is worth doing. Menacere (2016:29) characterises research methodology as the theoretical underpinning of the research, setting the direction of the research as well as its potential implications. Importantly, the literature review helps shape the methodology. To be acceptable, research findings must be based on a clear methodological framework so that they can readily be translatable into action. According to Ijasan and Ahmed (2016:136), methodology refers to the combination of and reasons for the different methods a researcher uses to solve a research problem. Thus the methods used in a research project are justified by its methodology (Carter & Little, 2007:1-2). A research methodology enables the researcher to position the research problem in an appropriate philosophy, develop the appropriate approach to investigate the research problem, choose a fitting research strategy that leads to suitable data collection methods, and carry out the correct unit of study, ensuring the validity and reliability of the results (Ahmed & Opoku, 2016:22-23). The research methodology adopted in this study determines the route taken in achieving the primary research objective

(Omotayo & Kulatunga, 2015:3), which is to explain students' preferences in respect of their accommodation by exploring various room attributes and student characteristics. Ahmed and Opoku (2016:22-23) add that objectives are in turn directions that the researcher takes with the purpose of achieving the aim of the research.

According to Omotayo and Kulatunga (2015:4), there are two major frameworks available for research methodology in built environment research: the research onion as produced by Saunders et al. (2009) and the nested method. However, it seems that the research onion is the most utilised procedural framework for research in the built environment discipline because of the detailed information it provides to guide researchers (Omotayo & Kulatunga, 2015:4; Bilau et al., 2018:599). For this reason, the research onion model was adopted for this study. The research onion breaks down the research process into more detailed stages, from the research philosophy through the time horizon to techniques and procedures, summarily explaining all aspects of a research project (Ijasan & Ahmed, 2016:136). See Figure 4.1, below.

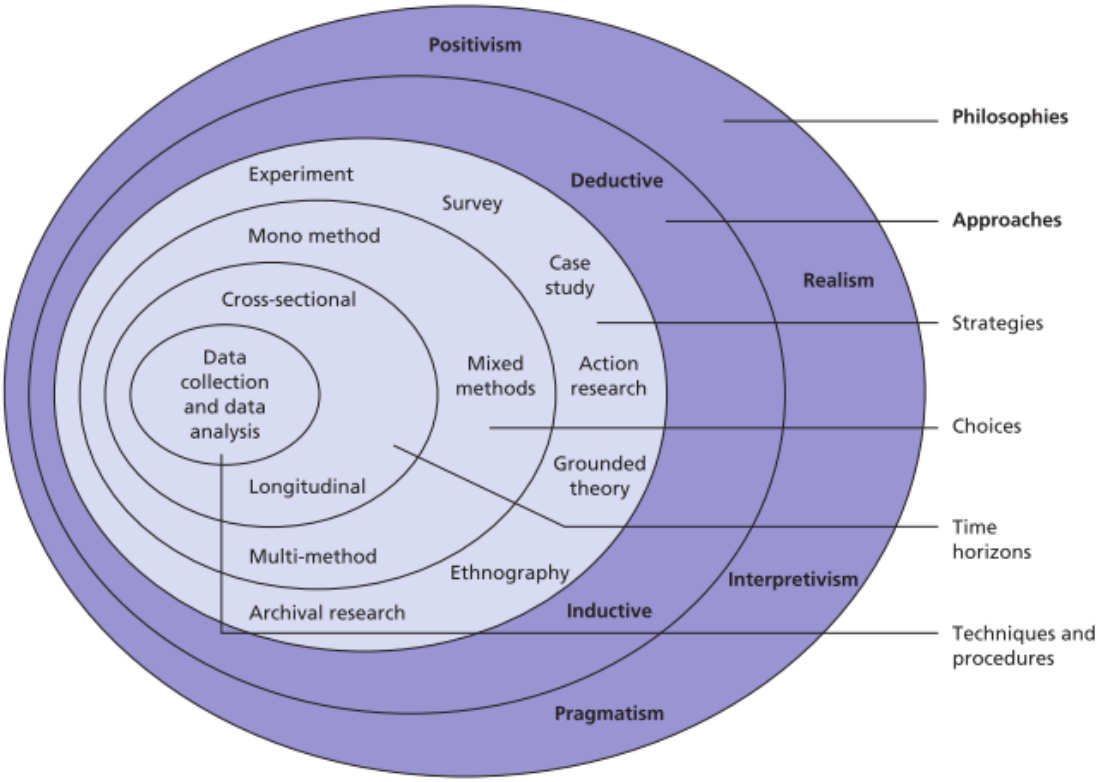

Figure 4.1: The research 'onion'
Source: Saunders et al. (2008)

The research questions and the study's aims and objectives should serve as a guide for the design and methodology of the research (Bilau et al., 2018:599). As set out in Chapter One, the overall aim of this study is to measure the preferences of students for various accommodation features, and to determine if these preferences vary between types of students. See Table 4.1, below.

Table 4.1: Research objectives and questions

Research Objectives	Research Questions
To identify the relevant room attributes. To identify their degree of importance in student's housing preferences.	Which room attributes are important in students' housing preferences, and to what degree?
To determine how much more students are willing to pay for additionally required features.	What is the Willingness to Pay for these attributes?
To establish how students make trade-offs between room attributes.	How do students compare, or trade off, the importance of one attribute with/against another?
To determine the relationship between student housing preferences and their socio-demographic characteristics.	Which socio-demographic characteristics explain students' housing preferences, and to what extent?

The first two layers of the research onion consist of identifying the ontological and epistemological position of the researcher, by articulating the research philosophy and research approach. This is followed by descriptions of the strategy, choices, and time horizons of the research, and finally the sixth layer, the procedures of data collection and analysis.

4.2 Research position and approach

In order to make clear the methodology followed for the current research, Table 4.2, below, conceptualises the research design, indicating the research philosophy, approaches, strategy and methods. Compiled from ten sources by Haydam (2012:231) this framework also indicates the major methodological terminology used in the research. The framework thus provides insight to supplement that deriving from Saunders et al.'s (2009) research onion.

Table 4.2: Conceptualising research designs/ strategies

1. Research philosophy [paradigm/ epistemological position/ approach]	***Researcher's sociological departure point and life orientation.*** (a) [non-empirical] Theoretical / historical / philosophical - basic research (b) Empirical (applied) research: (i) interpretivist (qualitative)-, (ii) positivistic (quantitative), (iii) realistic and (iv) the critical approach.			
2. Research discourse [type of reasoning]	(a) Exposition; (b) Argument/reasoning: (i) inductive (theory building), (ii) deductive (theory testing/ testing causal relationships) (iii) abductive reasoning (symptomatic hypothesis formulation).			
3. Research strategy [design]:	EXPLORATORY RESEARCH DESIGN		DESCRIPTIVE RESEARCH DESIGN (sample or census surveys)	
4. Time horizon:	Longitudinal	Cross-sectional	Longitudinal	Cross-sectional
5. Research tactics (approaches)	1. Fact-finding 2. Grounded theory 3. Basic qualitative research 4. Phenomenology 5. Case analysis 6. Pilot study 7. Observation 8. Action research 9. Game/role playing		1. Person-administered 2. Telephone-administered 3. Self-administered	
6. Interviewing techniques and methods	1. Secondary data review, model building, literature review, reporting 2. (Grounded theory) 3. Group discussions, Delphi technique, individual interviews 4. Hermeneutics, narrative analysis 5. Ethnography, case study method 6. (Pilot study) 7. Human and mechanical observation 8. (Action research) 9. Scenario research		1. Electronic, fixed premises and consumer face-to-face intercept interviews 2. Traditional, CATI, text based- and completely automated telephone interviews (CATS) 3.1 Mail-administrated: Freepost, fax, postal and electronic mail surveys 3.2 Self-completion: paper and electronic (self-administrated) interviews	
6.1a Sample design	Non-probability sampling		Probability sampling, non-probability sampling	
6.1b Sample techniques	Convenience, quota, experience, purposive and snowball sampling [selection]		Simple random, systematic (object and time based), stratified (proportionate and optimal), cluster (one and two stage, area), multi-stage, convenience, quota, experience, purposive and snowball sampling (selection)	
6.2 Measurement	Open-ended and conversational questions		[Closed-ended questions] Structured; scaling techniques and attitude measurements.	
6.3 Data manipulation [data analysis method]	Category construction; deductively based (pattern matching, explanation building) and inductively based (content analysis, analytical induction)		Statistical analysis (descriptive and inferential) and hypothesis testing.	

Adapted from Haydam et al. (2012)

4.2.1 Research philosophy

As the research philosophy can be considered the bedrock of any research, it is essential for the researcher to clarify this before proceeding to the research approach. Omotayo and Kulatunga (2015:4) maintain that the research philosophy acts to guide the researcher when determining the approach, strategy, data collection techniques and procedures. The philosophy adopted by the researcher is usually informed by assumptions, essential to his or her world view, that serve to underpin the research strategy and methods. The most significant assumptions concern ontology, epistemology and axiology (Saunders et al., 2009:129).

The term ontology literally means the study of being or reality (Mouton, 2009:46), whilst epistemology is concerned with knowing, with what constitutes acceptable truthful knowledge in a field of study (Saunders et al., 2009:112). Axiology, on the other hand, is a branch of philosophy that studies judgements about value (Saunders et al., 2009:129). Pertaining to the judgment of value by the researcher, the two positions of value being related to positivism (value neutral) and social constructionism (value-laden).

The various philosophical positions include the positivist, anti-positivist (called interpretivist in Table 4.2), realist and pragmatist. Each embodies different ideas about reality and how knowledge can be gained from it (Scott, 2016:191).

Regardless of practical considerations that influence which philosophy is adopted, the specific view the researcher holds of the association between knowledge and how it is produced is most likely to be the biggest influence on this decision (Saunders et al., 2009:108). Saunders et al. (2009) insist that whether research should be philosophically informed is not so much the issue, as to what extent a researcher can reflect upon and defend their philosophical choices in relation to the alternatives that could have been chosen.

The research philosophy adopted in this research is positivism. Positivism searches for fundamental laws and causal explanations and, in order to facilitate analysis, typically reduces the whole to the simplest elements possible (Amaratunga et al., 2002:18). Positivists model their own practices on those of the successful natural sciences as they believe that guidelines from the natural sciences should be applied to the social sciences. This research practice emphasises quantification in measurement and the quest for universal laws of human behaviour. Within the positivist paradigm, the researcher remains objective and detached from the research subjects (Babbie et al., 2001:645). Positivists believe in a stable reality that can be perceived and described from a viewpoint of objectivity (Punch, 2005, as cited in Aziz et

al., 2016:93). Thus, according to Saunders et al., (2009:150), ontologically speaking, reality is perceived as objective, external and independent of social actors.

Positivists furthermore insist that reality must be investigated through a rigorous process of scientific enquiry. The philosophy requires focusing on facts and uncovering the causality between variables (Easterby-Smith et al., 2012, as cited in Aziz et al., 2016:93). Therefore, epistemologically, only phenomena that can be observed can provide credible data and facts. Research by the positivist is handled through quantitative methods comprising experiments, surveys, simulations, etc. (Holden & Lynch, 2004, as cited in Omotayo & Kulatunga, 2015:5). The epistemological views of positivism are applicable to the research objectives of this study.

Saunders et al. (2009:150) comment that a researcher could have an objective stance about the concept of value in a research project, or instead add his or her personal experiences and have a subjective point of view. Axiology relates to the researcher's judgement of value, which can be value-free (positivism) or value-laden (interpretivism). As highly structured methods of quantitative data collection and analysis were used, from a large sample, axiologically this research was done in a value-free way, treating reality as external and independent of the researcher's knowledge, experience and control (Aziz et al., 2016:93).

Based upon the research philosophy, the research approach is next up for discussion. The research approach determines which research strategy is used for the study, including the sample size and the method of analysis (Omotayo & Kulatunga, 2015:6).

4.2.2 Research approach

The two main approaches to research are inductive and deductive. From an epistemological viewpoint, the deductive approach is based on positivism and the inductive approach on interpretivism (Omotayo & Kulatunga, 2015:7). With deduction a theory and hypothesis are formulated and empirically tested. In contrast, with induction data is collected and analysed and a theory developed from the results (Saunders et al., 2009:129).

Obviously very few studies are entirely deductive or inductive. There is a qualitative element to the survey in this study, in that the view of the participants on the subject under investigation is considered, but the study mainly takes a positivist stance, using a questionnaire to survey participants. The data collected is also analysed statistically. According to Aziz et al. (2016:93), in addition to the philosophical stance of the researcher, the nature of the accessible data is also a defining parameter in research approaches. Moreover, when quantifiable or numerical

data is more readily accessible, such as in this study, generally a quantitative research methodology is employed (Neuman, 2007, as cited in Aziz et al., 2016:93).

Quantitative research is mainly synonymous with techniques of data collection (e.g. questionnaires) or data analysis procedures (including statistics or graphs) generating and/ or using numerical data (Saunders et al., 2009:151). Phenomena are explained by collecting numerical data which is analysed statistically, and quantitative research is likely to be explanatory, providing 'snapshots' to address questions such as 'what', 'how many' and 'how much'. In addition to allowing for data collection in a relatively short time and at a fairly low cost, the quantitative research approach allows for a wider study with a greater number of subjects. As this approach enhances the generalisability of the results, with replicability and the capacity for comparison with similar studies (Aziz et al., 2016:93), a quantitative research approach is followed in this research.

The research in question aims to measure students' preferences for various accommodation attributes and to determine if preferences differ between types of students. The researcher aims to better understand which housing attributes are important to students and the differences and similarities in students' preferences.

Based on the key research objective, which is to explain students' overall preferences towards their accommodation by exploring various room attributes and student characteristics, a quantitative deductive approach was adopted for this research.

With the first two layers of the research onion – research philosophy and research approach – having been peeled away, the next section addresses the strategy used for this research. This is the first of three layers focusing on the process of research design, the others being research choices and time horizon (Saunders et al., 2009:136).

4.3 Research strategy and design

Saunders et al. (2009:137) state that the researcher's philosophy and approach influence the way in which s/he decides to answer the research questions, a decision that subsequently informs the research strategy, data collection techniques and analysis procedures, including the time horizon. The research design is the general plan of how the researcher sets out to answer the research questions. In addition to containing clear objectives, it specifies from which sources the data has to be collected, contemplates inevitable constraints such as time and money, and discusses ethical issues. Saunders et al. (2009:136-137) advise that

decisions regarding the research design must be consistent with the research philosophy and based on the research questions and research objectives.

> A quantitative research design has always been concerned with defining an epistemological methodology for determining the truth-value of propositions and allows flexibility in the treatment of data, in terms of comparative analysis, statistical analyses, and repeatability of data collection in order to verify reliability. (Amaratunga et al., 2002:22)

Saunders et al. (2009:138) distinguish between design and tactics as follows: whilst design is about the overall research plan, tactics relate to the finer details of data collection and analysis, the research onion's centre. Saunders et al. stress that the researcher has to clarify the different qualitative and quantitative data collection techniques (e.g. interviews, questionnaires, secondary data and focus groups), as well as data analysis procedures, before deciding on tactics.

Research in the built environment commonly involves getting answers to questions from people by conducting surveys using interviews and questionnaires (Amaratunga et al., 2002:26), though Wisker (2009, as cited in Omotayo & Kulatunga 2015:7) points out that the research strategy could assume a wide variety of forms, including surveys, case studies, field experiments, action research, ethnography, simulations, laboratory experiments, role playing and archival analysis. The suitability of the different methods is determined by the research objectives and the philosophy underlying them. Within the quantitative, deductive approach, exploratory and descriptive research typically makes use of the survey strategy, asking questions such as who, where, what, how many and how much, (Saunders et al., 2009). That they allow for cost-effective data collection from a large population contributes to the popularity of surveys (Saunders et al., 2009:144). Thus because certain of this study's objectives involved collecting a large amount of data from students, the survey strategy was deemed suitable. Obtained by administering a structured questionnaire to a population sample, the data is standardised and lends itself to easy comparison. People generally perceive the survey strategy as authoritative and easy to understand and explain. Quantitative data collected through the survey strategy can be analysed using descriptive and inferential statistics (Saunders et al., 2009:144).

4.3.1 Exploratory research design

In order to comprehend the extent of the problem, the researcher initially conducted some exploratory research, using currently existing theories as a guide. The exploratory research included a literature review and conversational interviews with student focus groups.

4.3.2 Descriptive research design

Once the groundwork had been done, the next step was descriptive research to explore the topic further and provide additional information. According to Haydam and Mostert (2013:82) a descriptive research design obtains and statistically analyses quantitative data to answer the questions ‘who’, ‘what’, ‘when’, ‘where’, ‘why’, ‘how, and the ‘how often’ with reference to a specific target population.

Amaratunga et al. (2002:26) posit that the descriptive survey is commonly used in the built environment with the intended outcome being a substantial amount of information that is classifiable according to type, frequency and central tendency. Descriptive research accordingly takes the form of a person-administered survey in this study.

4.4 Time horizon

In planning the research, according to Saunders et al. (2009:155), the question should be asked whether the research should be a “snapshot” taken at a particular time, or more a diary or a series of snapshots, representing events over a certain period of time. The answer, as always, should depend on the research questions. Saunders et al. (2009) state that the “snapshot” time horizon is called cross-sectional, whilst the diary perspective is known as longitudinal. Various schemes have been suggested to classify the different approaches to measuring housing preferences, but the most generally accepted distinction is that between dynamic models based on event history data and cross-sectional models (Molin, 1999:11). Molin (1999) argues that, whereas dynamic models are most appropriate in describing and predicting the dynamics and timing of housing preference and choice, cross-sectional models are generally better suited for the analysis of housing preference and choice patterns. The current research on student housing preferences is cross-sectional in that it collects data at a single point in time, rather than over a longer time period.

4.5 Study site and sample frame

The site of the present research is the District Six campus of CPUT, a Cape Town university with more than 35 000 students. The institution offers student accommodation to almost 8 000 students on various campuses in the Western Cape, with the District Six campus accommodating 4 411 students in 12 residences on or near the campus (see Table 4.3).

The District Six campus offers a good venue for researching student preferences as the range of accommodation is diverse. The residences vary in a number of respects. Regarding distance from campus, some of the student residences are situated either on or close to campus in the District Six area, whilst others are some distance away in the CBD, or as far

away as Woodstock or Observatory. Residences also vary in terms of the number of people on each floor who share communal facilities (kitchen, showers and toilets). Room prices (2017) vary from R2 640 per person per month for the cheapest room (a double room at Sandenburgh) to R4 477 per person per month for a single room at Cape Suites. Students also have the choice of whether to stay in single gender or mixed facilities, except for two buildings which are only male (Hanover Street Residences) or female (Elizabeth Women's Residence) (CPUT, 2017). Some buildings are small and others big and the various buildings are also differently designed, with some being high-rise flats, others resembling semi-detached houses and still others reminiscent of old-fashioned school boarding houses. Finally, there is considerable variation in the age of the buildings, with some only a few years old and others a few decades.

This diversity of accommodation offers a good site for researching student preferences as it improves the possibility of generalising the findings of the research to other accommodation facilities and universities. Furthermore, as students at this university can choose from a variety of accommodation options, they have an awareness of the dissimilarities in accommodation and thus should have the ability to express their preferences. Instead of simply making hypothetical assumptions about their preferences, participants were required to express preferences for accommodation alternatives similar to the options presented in the survey, increasing the validity of the findings.

Table 4.3: CPUT student housing near District Six campus

District Six Campus Residences	Students N	Double Room (2017)		Single Room (2017)	
		Rental PA	Rental PM	Rental PA	Rental PM
Cape Suites	285	R40 699	**R4 070**	R44 769	**R4 477**
Catsville (Groote Schuur)	830	R26 494	**R2 649**	R29 143	**R2 914**
City Edge Residence	569	R36 111	**R3 611**	R39 722	**R3 972**
Downtown Lodge Residence	132	R26 494	**R2 649**	R29 143	**R2 914**
Elizabeth Women's Residence	207	R26 494	**R2 649**	R29 143	**R2 914**
Hanover Street Residence	291	R36 111	**R3 611**	-	**-**
J&B Residence	19	R26 494	**R2 649**	R29 143	**R2 914**
New Market Junction South Point	1126	R27 849	**R2 785**	R30 634	**R3 063**
Plein Street South Point	317	R27 849	**R2 785**	R3 ,634	**R3 063**
President House South Point	86	R27 849	**R2 785**	R30 634	**R3 063**
Sandenburgh Residence	160	R 6 494	**R2 649**	R29 143	**R2 914**
St Peters Residence	389	R30 324	**R3 032**	R33 358	**R3 336**
TOTAL	**4411**				
AVE			R2 994		R3 232
MAX			R4 070		R4 477
MIN			R2 649		R2 914

Source: (CPUT, 2017)

4.6 Data collection techniques

4.6.1 Literature review

A literature review was conducted to critically evaluate past research relating to student preferences for university accommodation. The purpose was to explore the theoretical underpinnings of research into student housing preferences and place them within the South African context. The literature reviewed include published peer-reviewed journal articles in accredited and other academic journals, academic books, conference papers, official materials published on recognised websites and newspaper articles. Sources consulted include Google Scholar, Emerald, EBSCOHost, ScienceDirect, Scopus and Springerlink. The literature review was ongoing from June 2016 until November 2018.

4.6.2 Conversational interviews

At the exploratory stage of the research the researcher conducted semi-structured interviews with seven student focus groups. This was done to get a sense of the key issues prior to compiling the questionnaire to collect descriptive data. The goal was to identify, beyond the scope of what was discovered in literature, which features students take into account when they choose accommodation (Poria & Oppewal, 2002:120). Saunders et al. (2009:153) notes that a preliminary study can serve to reassure the researcher that the key issues are being addressed in the questionnaire. During these exploratory interviews CPUT students were

asked which features they would prefer when choosing a room. As recommended by Haydam and Mostert (2013:76), the interviews were conducted in person with the interviewer covering certain topics against a checklist, though the course of the interview was guided by the responses of the respondents. The flexible structure of the interviews allowed the interviewees the scope to respond freely (Thomsen, 2008:31). Furthermore, an attempt was made to include a diversity of CPUT students who live in student accommodation and reduce the risk of producing results only applicable to a specific subgroup (Poria & Oppewal, 2002:120). Focus group samples were selected from students in the Property Marketing class by the researcher using personal judgment (Haydam & Mostert, 2013:126). The interviewees mentioned several aspects pertaining to how they view their accommodation, which were subsequently utilised in compiling the final questionnaire. Information was also gathered in class, where students were free to discuss accommodation issues, giving the researcher a fuller picture of the aspects of accommodation that were of interest to students (Poria & Oppewal, 2002:120). Overall these initial interviews helped to engender a better understanding of the situation (Ijasan & Ahmed, 2016:239).

4.6.3 Person-administered survey

An empirical study was conducted with a sample of university students in Cape Town to answer the research questions. Descriptive research took the form of a person-administered survey amongst CPUT students who reside in student accommodation in and around the District Six campus.

4.6.3.1 Questionnaire design

Using the questionnaire of Oppewal et al. (2005) as a template, a structured person-administered questionnaire was designed. A conjoint analysis experiment was combined in the questionnaire with a series of additional questions dealing with students' accommodation preferences and students' socio-demographics.

The questionnaire is based on (1) previous studies of student housing preferences found in the literature and (2) the input of students during the focus group interviews. Investigations of student accommodation features and preferences by the following were adapted for the South African context: Oppewal et al. (2005), Amole (2011), Khozaei et al. (2014), Nijënstein et al. (2015), Verhetsel et al. (2016) and Tazelaar (2017). Two commonly used preference measures, direct measurement and conjoint analysis, were used to examine students' accommodation preferences.

Using direct measurement, in the first two sections of the questionnaire respondents were asked a series of questions to measure their preferences regarding various aspects of their accommodation, using a 9 point Likert-type scale.

Thereafter students are asked to indicate their willingness to pay (WTP) to upgrade various aspects of their accommodation. In order to make it as lifelike as possible, students were provided with the information that the cheapest and simplest room in the residence was R2000 per month (based on information on the CPUT website). Students were also reminded that "everything adds up to the total price of the room."

In order to elicit the respondents' preferences in respect of student housing, the next section of the questionnaire was a conjoint choice experiment. Students were presented with six scenarios which included descriptions of three different rooms in the residences. Respondents had to indicate their preferences by rating the alternatives within different choice sets multiple times.

The attributes and levels are based on the study by Oppewal et al. (2005) but adapted for local use. Because it was not possible to present all possible combinations of features, a fractional factorial design was chosen. Eighteen different attribute profiles are presented in six sets of three profiles. For each profile respondents had to indicate on a scale from 1 to 9 "how much they like or dislike" the accommodation. An example of a profile is given at the start of the conjoint choice experiment as it was felt that this format was not commonly found in questionnaires.

After the experimental tasks, students were asked questions about their current living situation and attitudes. Studies in the field of housing decisions usually include questions about the current housing situation (Louviere & Timmermans, 1990; Lindberg et al., 1992; Mulder, 1996; Dieleman, 2001; Lee & Waddell, 2010; Tazelaar, 2017).

The questionnaire concluded by eliciting basic socio-demographic data. Student characteristics which might significantly influence student housing preferences were identified from the literature (Oppewal et al., 2005:117; Amole, 2011:47; Khozaei et al., 2014:714-717; Nijënstein et al., 2015:202; Verhetsel et al., 2016:457; Tazelaar, 2017:30). The researcher also chose student characteristics which would be useful for student housing managers when allocating students to residences in future. Participants were asked questions about their age, gender, nationality, language, religion, population group, study level, academic course, department, and years spent at university and in student accommodation at CPUT.

The questionnaire was proved to be valid and reliable in the study of Oppewal et al. (2005), but statistical services at CPUT was also consulted to work through the questionnaire to ensure its reliability and validity. The questionnaire is attached in Annexure A of this thesis.

4.6.3.2 The pilot and/or pre-test study

In order to establish the issues to be addressed in the large-scale survey, the first phase of the pilot involved conversational interviews with student focus groups. Once the questions, techniques and methods had been finalised, a pilot survey was conducted, with a pre-test to evaluate question clarity. A pilot study is a mini version of a full-scale study. Seventeen respondents with comparable profiles were selected and during a trial run the questionnaire was pre-tested to establish whether respondents understood the questions, and to confirm that there were no ambiguous or confusing questions. The participants had to complete the questionnaire in the presence of the researcher. They were asked to comment on the difficulty level, make suggestions for improvements and point out potential problems. All this was done to confirm the face validity of the questions and improve the questionnaire before the actual fieldwork started. Although it does not necessarily assure success in the main study, a pilot study comprises a vital part of a good study design, increasing the likelihood of success (Van Teijlingen & Hundley, 2002:33). The survey was piloted during the first week in May 2017 in the Property Marketing class, with students who reside in CPUT accommodation. No changes were deemed necessary to the questionnaire and methodology. Both method and measuring instrument were found to be sufficiently robust.

4.6.4 Survey procedures

The administration of the final questionnaire took place during the second semester in 2017. Data was collected for the research through the administering of 650 paper-based surveys to students. A non-probability purposive sampling procedure was used. Students in real estate at the university were assigned the task of distributing the questionnaires among students residing at CPUT residences. A total of 81 Property Marketing 1 and 38 Property Practice 2 students assisted in distributing the questionnaires. After the students were thoroughly trained in the basic principles of administering a questionnaire, each were given five printed questionnaires to distribute for completion. The exercise was a class assignment for the students. Before they completed the questionnaire, the research participants were briefed on the principles of informed consent and confidentiality and had the aim of the study explained to them. The fieldwork took place between May and August 2017, and the last completed questionnaires were accepted on 9 August 2017. This study analyses the 457 usable questionnaires that were returned.

The broad concept of research design featured in Table 4.1 is applied to the current study in Table 4.4, below.

Table 4.4: Research strategy and methods

Number of questionnaires	650, of which 457 were usable
Research philosophy	Empirical (applied) research Positivistic approach
Type of reasoning	Deductive (theory testing)
Research strategy	Descriptive research design (survey)
Methodology	Quantitative
Time horizon	Cross-sectional
Research approach	Literature review, mini-group discussions, person-administered survey
Interviewing methods	Self-completion: pen and paper (self-administrated) interviews
Sample selection	Non-probability
Sampling technique	Purposive sampling
Measurement	[Closed-ended questions] Structured; scaling techniques and attitude measurements
Data analysis method	Statistical analysis (descriptive and inferential)

Adapted from Steenkamp, 2016:111

4.7 Data analysis, validity and reliability

Quantitative data was captured on an Excel spreadsheet and analysed with SPSS. Descriptive and inferential statistics were used to analyse the data, including means and standard variations.

In order to test the quality of the empirical data collected, researchers should be able to show which measures were adopted to increase its validity and reliability (Ahmed & Opoku, 2016:25). The variables that are part of the research questions were analysed using the Chi-square test for the relationship between categorical variables. In the conjoint analysis coding was used, with levels of categorical variables being replaced by numerical codes. The data for the conjoint experiment was analysed by applying the general linear model (analysis of variance) using the conjoint results in SPSS software.

4.7.1 Validity

Saunders et al. (2009:157) maintain that validity deals with whether the findings actually are about what they seem or claim to be about. Did the researcher actually measure what was supposed to be measured and are these valid measurements for the “concept as it was intended”? Is the variable operationalised appropriately and the right question used? (Boumeester, 2011:33). With students at CPUT having a diversity of accommodation options to select from, and being aware of differences in accommodation, they ought to have been able to express their preferences. In other words, the fact that the participants were not simply making hypothetical assumptions about their preferences but choosing between alternatives

resembling the ones presented in the survey increases the validity of the study (Poria & Oppewal, 2002:120). The validity of the study is also supported by the researcher's making use of the questionnaire of a recognised researcher in the fields of conjoint analysis and housing studies.

4.7.2 Reliability

Researchers should also be able to demonstrate the reliability of the results obtained. Reliability is based on accuracy. A study should produce the same results if repeated with different groups of people or over a certain period of time. Errors should be random rather than systematic (Boumeester, 2011:2). Researchers should furthermore identify any influential factors or bias that may have impacted on, or distorted, the data, and report whether any measures have been taken to remove the likely bias (Ahmed & Opoku, 2016:25).

In order to enhance the reliability of the questionnaire a pilot survey was conducted.

4.8 Ethical considerations

In research, as in any other field of human endeavour, ethical behaviour is important. Ethical issues arise in all research, including plagiarism and honesty when it comes to the reporting of results. However, additional concerns arise when the research involves human subjects. The principles fundamental to "research ethics" are universal and relate to matters such as respect for individual rights and honesty (Welman et al., 2009:181).

Like most universities, CPUT has a code of ethics enforced by Ethics Committees which are required to approve all research projects. Approval for this research was granted by the Faculty's Research Ethics Committee (Annexure C). In addition, as the study used CPUT's student data to obtain relevant information, permission was obtained from the academic institution itself.

Market researchers, like most professional groups, have recognised codes of ethics that members are obliged to observe (Welman et al., 2009:181). This study is guided by SAMRA ethics in terms of confidentiality, permission to participate and anonymity. In other words:

- No respondents' names are linked to the results.
- Respondents were advised that participation was voluntary and that they could terminate the questionnaire or interview process at any time.
- As per SAMRA stipulation, 20 per cent of all interviews conducted was back-checked for the correctness of information.

No harm was done to any of the participants and, based on informed consent, all respondents participated in the research by their own free will. Regarding informed consent, before research commenced participants were told the following:

- The purpose of the research.
- The research procedures used.
- That their participation was voluntary.
- That they might at any stage withdraw from the research.
- That their information would be strictly confidential.
- That no references would be made to specific individuals.
- That all responses would be used for academic purposes only.

4.9 Summary

This chapter described the study's research design. The chapter commenced with a justification of the research methodology and data collection methods. The sample frame selection was sketched, after which the questionnaire design and survey procedures were described and justified. The steps involved in the administration of the survey and the data processing procedures were presented. The criteria for validity and reliability to guarantee the accuracy of the measurements were presented, and the chapter concluded with a discussion of relevant ethical considerations.

Chapter Five provides insight into the modelling approach used in the empirical study.

CHAPTER 5
DESIGN AND MODELLING APPROACH OF THE STATED PREFERENCE EXPERIMENT

5.1 Introduction

As a conjoint experiment is used in addition to direct measurement to examine student housing preferences in this study, the modelling approach of the preference experiment is discussed in this chapter. After a brief account of the difference between stated and revealed preferences, the term conjoint analysis is clarified. The methodological framework is presented next, followed by an outline of the steps in the stated preference approach and its application in this research.

As discussed in Chapter Two, the concept of housing is complex and the measurement of housing preferences complicated. Because the topic has attracted the interest of researchers from many different disciplines, there are various different approaches and models available in housing preference research.

Jansen et al. (2011:12) advise that, while there are different ways to measure what consumers want, the type of information that the researcher is interested in should determine the choice of a specific method.

Some methods and analytical techniques for measuring housing preference currently applied in the field of housing research are summarised in Table 5.1. In addition to short overviews of the goals and the type of outcome for each specific technique or method, the dimensions that can assist in explaining the similarities and differences between the chosen methods are also incorporated (Jansen et al., 2011:12).

Table 5.1: Methods and analytical techniques for measuring housing preference and housing choice

Methods and analytical techniques	Goal	Type of outcome	Origin: Stated or revealed	Design: Freedom of attribute choice	Compositional vs decompositional
Traditional Housing Demand Research method	To obtain accurate insight into the current and future demand for housing, in a quantitative as well as qualitative sense	A quantitative description of housing preferences and of the willingness to move	Stated	No	Compositional
Decision Plan Nets method	To reveal people's choice process based on individual mixes of dwelling (environment) characteristics that are deemed essential, those that can be compensated for and those that are deemed irrelevant	The substitution interval that defines a ranked set of houses that the consumer would consider acceptable	Stated	Yes	Compositional
Meaning Structures method	To assess what people's housing preferences are and why they have these preferences	An overview of the preferred attribute level per housing attribute and the meanings of these housing attribute levels	Stated	Yes	Compositional
Multi-Attribute Utility method	To make a rational choice between available alternatives based on the dwelling profile that yields the most utility	A multi-attribute utility (strength of preference) for every alternative	Stated	Yes	Compositional
Conjoint Analysis method	To estimate a utility function that can be used to predict the overall utility of residential profiles and thus to compare residential alternatives in terms of peoples' preferences	A utility function that describes to what extent each attribute level contributes to the overall utility of a residential alternative	Stated	No	Decompositional
Residential Images method	To examine preferences for new alternatives holistically	A ranking of new alternatives	Stated	No	Decompositional
Lifestyle method	To build/ restructure/ distribute dwellings according to lifestyle group preferences	An assignment into a particular lifestyle group	Stated	No	NA
Neoclassical economic analysis	To rank and assess the preferences for alternatives	Monetary estimates of the willingness to pay for and equilibrium price of alternatives	Both	No	NA
Longitudinal analysis	Analysis of a specific research question regarding the issue of how characteristics or circumstances at one point in time shape individual outcomes or decisions at a later point in time	An indication of the stability of one or more variables or the relationship between two or more variables over time	Both	No	NA

NA = not applicable
SOURCE: adapted from Jansen et al., 2011:18-20

5.2 Approaches to model residential preferences

Among the schemes to classify the various approaches to measuring housing preferences, the most general distinction is possibly one made between dynamic models based on event or panel historical data and cross-sectional models. Whilst dynamic models are most suitable to predict or describe the dynamics and timing of housing preference and choice, cross-sectional models in contrast are usually easier to develop and also more appropriate in the analysis of housing preference or choice patterns (Molin, 1999:11). Two recognised cross-sectional approaches are revealed preference and stated preference modelling (Molin, 1999:12).

The revealed preference model is the dominant approach in economics, but the stated preference model is more prominent in behavioural science (Kersloot & Kauko, 2004:150). In the literature these two approaches have been used extensively to explore the topic of housing preferences (see Figure 5.1).

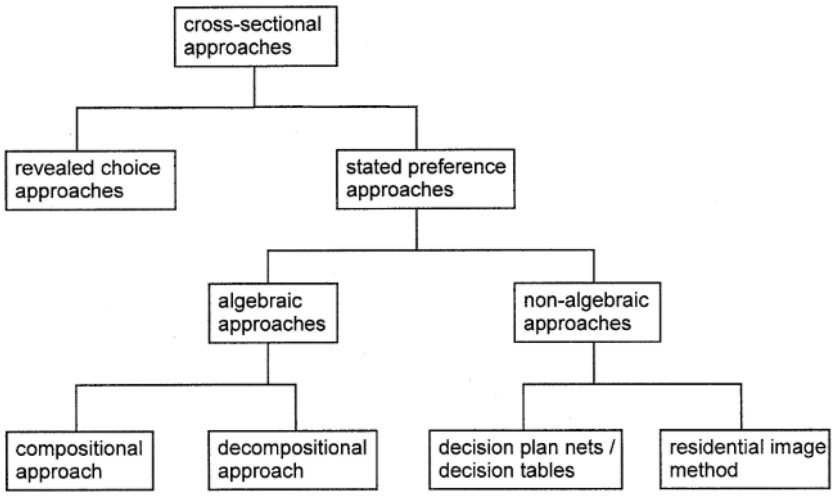

Figure 5.1: An overview of cross-sectional approaches for modelling residential preferences
Source: Molin (1999:13)

5.3 Stated preference approaches

Whilst revealed models are based on real situations and involve observation of the actual choices that households make in real markets, stated preference and choice models in contrast are based on the reaction of people to hypothetical houses (Timmermans et al., 1994:215). Thus, Molin (1999:12) recommends that stated preference approaches are more suitable to predict behaviour for choice situations that do not yet exist.

A further subdivision can be made in stated preference models between algebraic and non-algebraic approaches. Algebraic models share the assumption that some algebraic rule adequately describes housing preferences and utilities. Compensatory decision strategies can thus be described by a linear function and non-compensatory decision strategies by a multiplicative function (Molin, 1999:12).

Algebraic approaches can be further subdivided into compositional and decompositional modelling approaches (Molin, 1999:12).

> In the compositional approach housing preferences are measured by letting people select the preferred level of each of a number of housing attributes and by having them indicate the relative importance of each attribute. Using some algebraic rule, often the linear additive rule, this information is combined to arrive at an overall preference measure. (Coolen & Hoekstra, 2001:289)

A study by Lindberg et al. (1989) is an example of the compositional modelling approach in housing preference measurement. Although it is a relatively simple modelling approach, several problems can be identified with the compositional approach, including the question of the reliability and viability of separate scales, the fact that respondents do not have to make trade-offs between attributes, and the fact that the mechanisms underlying the real processes of decision-making and choice are not reflected in the measurement task (Molin, 1999:21). Thus according to Molin (1999), predictions of housing preferences in new developments based on compositional housing modelling approaches possibly have limited validity.

In contrast to compositional models, where the preferences for attributes are measured separately and directly, in decompositional models (also referred to as conjoint models) overall preferences are measured for bundles of attributes, called profiles. In order to work out the overall evaluation of a profile, decision-makers have to trade off attributes against each other.

> Because the profiles are constructed according to the principles of the design of statistical experiments, the overall evaluations can easily and effectively be decomposed into the part-worth utility contributions of the different attribute levels. (Molin, 1999:21)

The steps involved in the construction of conjoint models are discussed in Section 5.4, below.

In this research, in addition to direct measurement, a stated preference (conjoint analysis) experiment was carried out to quantify student housing preferences. The next sections provide an overview of conjoint analysis and its applications, the steps involved in the conjoint analysis approach, and an account of how it is applied in this research.

5.3.1 Overview of conjoint analysis

The origin of conjoint analysis is the field of mathematical psychology, where it was introduced in the late 1960s by Luce and Tukey (1964). From Luce and Tukey's seminal research in the field of mathematical psychology, psychometricians designed a number of nonmetric models for "*computing part-worths (attribute-level values) from the respondents' preference orderings across multi-attributed stimuli, such as descriptions of products or services*" (Green et al., 2001:S57).

> The term conjoint analysis broadly refers to 'any decompositional method that estimates the structure of a consumer's preferences (e.g., part worths, importance weights, ideal points) given his/her overall evaluations of a set of alternatives that are pre-specified in terms of levels of different attributes'. (Green & Srinivasan, 1978:104)

Conjoint analysis first appeared in consumer-based literature in 1971 (Green & Rao, 1971). Accompanying the increasing importance of understanding consumer behaviour, conjoint analysis has since the 1970s been applied extensively, covering a variety of consumer research problems and becoming one of the most widely applicable methods for identifying consumers' preferences (Green & Srinivasan, 1990:3).

> Conjoint analysis is marketers' favourite methodology for finding out how buyers make trade-offs among competing products and services. Conjoint analysts develop and present descriptions of alternative products or services that are prepared from fractional, experimental designs. They use various models to infer buyers' part-worths for attribute levels, and enter the part-worths into buyer-choice simulators to predict how buyers will choose among products and services. Easy-to-use software has been important for applying these models. Thousands of applications of conjoint analysis have been carried out over the past three decades. (Green et al., 2001:S56)

Conjoint analysis methods are basically intended to "uncover" the underlying preference for a product in terms of its attributes (Rao, 2008:4).

Some applications of conjoint analysis in a number of fields feature below in Table 5.2.

Table 5.2: Applications of conjoint analysis in various fields

Fields	Authors
Business and Management	Yano and Dobson (1998), Oppewal et al. (2000), Natter et al. (2002), Gustafsson et al. (2007), Borgers et al. (2011), Kuzmanovic and Martic (2012), Adhikari et al. (2013), Theysohn et al. (2013)
Engineering	Michalek et al. (2005), Liu et al. (2011), Wu et al. (2014)
Technology	Lee et al. (2009), Venkatesh et al. (2012), Acosta et al. (2013)
Urban Studies	Katoshevski et al. (2001), Tayyaran et al. (2003), Borgers et al. (2008)
Healthcare	Ween et al. (2005), Fisher et al. (2010), Kuzmanovic et al. (2012)
Education	Altun et al. (2010), Sohn and Ju (2010), Kuzmanovic et al. (2013)

Source: Zortuk et al. (2014:4)

From Table 5.2 it can be seen that conjoint analysis is a widely accepted and applied method in the research literature (Vetschera et al., 2014:222).

Table 5.3 summarises the procedure typically applied in conjoint analysis, the various steps involved and the alternative methods of implementing them. The last column shows the methods applied in this research.

Table 5.3: Conjoint analysis procedure

Step	Alternative methods	Method applied in this study
1. Selection of a model of preference	Vector model, ideal-point model, part-worth function model, mixed model	Part-worth function model
2. Data collection method	Full profile, two-attribute-at-a-time (trade-off tables)	Full profile
3. Stimulus set construction	Fractional factorial design, random sampling from a multivariate distribution, Pareto-optimal designs	Fractional factorial design
4. Stimulus presentation	Verbal description (multiple-cue stimulus card), paragraph description, pictorial or three-dimensional model representation, physical products	Verbal description
5. Measurement scale for the dependent variable	Rating scale, rank order, paired comparisons, constant-sum paired comparisons, graded paired comparisons, category assignment	Rating scale
6. Estimation method	Metric methods (multiple regression); nonmetric methods (LINMAP, MONANOVA, PREFMAP, Johnson's nonmetric algorithm); choice-probability- based methods (logit, probit)	Multiple regression

Source: Adapted from Green & Srinivasan (1990:5)

Although the conjoint analysis approach has become popular in disciplines such as marketing and transportation over the years (Oppewal et al., 2005:114), it has not been applied very

often in studies of the environment and behaviour (e.g. Molin, et al., 1996; Molin, 1999; Oppewal & Timmermans, 1999; Molin et al., 2001; Molin et al., 2002).

5.3.2 Conjoint analysis in housing research

In recent decades, conjoint analysis has become an increasingly accepted approach for measuring housing preferences (e.g. Wang & Li, 2004; Oppewal et al., 2005; Lan, 2011; Nijënstein et al., 2015). Molin (1999:2) argues that conjoint analysis is a valuable modelling approach capable of providing valid measurements of residential preferences in order to evaluate proposed residential developments.

> Conjoint analysis is an approach that attempts to describe and predict choice behaviour of decision makers (dwellers) by using a special type of survey. Respondents are invited to respond to residential profiles, which can be viewed as integral descriptions of housing situations, describing the house and the residential environment. Typically, respondents are requested to give an overall score for each profile or to choose between sets of two or more residential alternatives. Because responses are observed for a series of profiles that are carefully constructed, one can statistically estimate a model of residential preference. The parameters of this model indicate the utility respondents derive from the various attributes. The utilities may be interpreted to answer questions such as: Are owner-occupied houses preferred to rented houses? How attractive does one find a specific number of bedrooms? How much more is one willing to pay for each additional square meter living room?
>
> If the estimated model is found to be valid, it can then be used to predict residential preferences, for example, to evaluate ex-ante the attractiveness of different kinds of housing. Thus, conjoint models are potentially powerful instruments for local authorities, housing corporations and development companies to make better informed decisions. (Molin, 1999:2-3)

The next section presents an outline of the steps involved in the construction of conjoint models.

5.4 Outline of steps involved

In stated preference and choice research, respondents are presented with experimentally designed descriptions of hypothetical objects or choice alternatives. They are required to rate them, or to choose from sets of alternatives. The responses are then analysed in order to discover how the various characteristics of the alternatives contribute to the overall evaluations (Oppewal et al., 2005:114).

According to Oppewal et al. (2005) the approach thus involves a series of steps:

> 1) Identification of the relevant attributes to describe the hypothetical alternatives, including the levels over which to vary the attributes;
> 2) Selection of an experimental design to guide the creation of a feasible number of alternatives for respondents to evaluate. Typically fractional factorial designs are

used, which allow estimation of the main effects, upon the assumption that (most) interactions can be ignored;
3) Design of the task instructions, explaining to the respondent the evaluation context or choice situation being analysed and the response format being used;
4) Specification of a mathematical model to relate the responses to the attributes and types of alternatives;
5) Collecting respondents' responses to the alternatives, which can be a rating for each designed alternative or choices from (designed) sets of alternatives;
6) Analysis of the responses; that is, estimating the parameters in the assumed model. This is typically done through the application of some regression based approach;
7) Assessing the model performance in terms of fit and predictive ability;
8) Interpretation of the model parameters and application of the model. (Oppewal et al., 2005:115)

The following subsections outline how this process was conducted in this research.

5.4.1 Attributes and levels

A successful stated preference experiment requires selecting appropriate attributes and levels befitting the experiences of the respondents and the objectives of the survey (Verhetsel et al., 2016:9).

As the selection of product attributes and levels is critical to the success of the conjoint experience design, it is crucial that the attributes and levels chosen by the researcher represent those actually used by respondents when making decisions (Adekunle, 2015:38). The attributes and levels for the current research are based on the 2005 UK study by Oppewal et al. In order to find out which attributes students take into account when they choose accommodation, Oppewal et al. held exploratory interviews with students at the university that was the site for their study. Students were asked which features they would prefer when choosing a room. Of the numerous attributes that emerged from the interviews, eight were deemed appropriate for inclusion. Seven of them were included in the Oppewal et al. survey because they were most frequently mentioned. These were related to rent, the number of students with whom to share ablutions, and distance from campus. Room sharing was one of the most commonly mentioned attributes, but it was not included in the questionnaire as the chosen university did not offer shared accommodation. Even though the view from the room was not mentioned often, it was included because it was of interest to the researchers (Oppewal et al, 2005).

To conclude, for the current research, the researcher chose attributes and levels based on the 2005 Oppewal et al. study as well as the literature review in Chapter Three, but restricted them to those that were realistic in the context of the local South African university selected as the site for the study. Therefore in finalising the attributes and levels, information from the student

focus group interviews as well as formal documentation from the university were taken into account. The attribute profiles were pilot tested in the CPUT Property Marketing class by the researcher.

The attributes and their levels (see Table 5.4) are determined in accordance with market research as follows:

- *Rent* in Rand (R) payable monthly.
- *Distance from campus* in terms of km.
- *Room size* in square metres.
- *Room sharing*, *Ablutions sharing* and *Kitchen sharing*.
- *Age of building* being *New, Renovated green*, *Old*
- *Mixed or Single gender floors*

The eight selected attributes and associated levels as included in this study are presented in Table 5.4.

Table 5.4: Selected attributes and their levels

Attribute (unit)	Level
Rent (Rand per month)	R2000 R3000 R4000
Distance from campus	On campus 2km from campus 6km from campus
Room size	8sq m (2x4) 12sq m (3x4) 18sq m (3x6)
Room sharing	To have my own room Sharing the room with one student only Sharing the room with more than two students
Sharing ablutions	Toilet and shower in the room Sharing toilet and shower with four other people Sharing toilet and shower with seven other people
Kitchen sharing	Have my own kitchen Sharing kitchen with four other people Sharing kitchen with more than seven people
Age of building	New Renovated green Old
Mixed or single gender floor	Mixed gender Single gender

5.4.2 Experimental design, dependent variables and model specification

In the first phase of constructing profiles, a measurement task, which is about the kind of answer sought from respondents, was determined. In this research individual rating-based

conjoint is chosen because of its usefulness in surveys with a large number of contributors. It also offers a simplification of real-world real estate market conditions (Moore, 2004:300). Examples of research based on rating tasks can be found in Veldhuisen and Timmermans, 1984; Molin et al., 1997; Oppewal et al., 2005; Zortuk et al., 2014 and Shehper, 2015.

In order to estimate and analyse students' accommodation preferences, a full-profile approach was used in the experimental design. In addition, concerning the number of profiles to be submitted, a reduced form was chosen to facilitate the data collection step (rather than a complete factorial design). In this study there are pairs of two-level and three-level attributes, which means that students would have to rate profiles (2×3^7). As it would have been impossible to present all the possible (2×3^7) = 4374 attribute combinations, for the current research a fractional factorial design was chosen. Such a design allows for estimation of the main effects whilst assuming that interaction effects can be ignored. Previous studies have found that main effects usually account for 70-90 per cent of explained variance in linear models (Louvere et al., 2000, as cited in Nijënstein et al., 2015:204).

As per the Oppewal et al. (2005) study, a design of 18 treatments is chosen from the full factorial design, creating 18 profiles to be presented to the respondents. In the final questionnaire these 18 profiles are presented in 6 sets of 3 profiles, with 2 sets printed on each page. Respondents are then asked to indicate for each profile 'how much they like or dislike' the accommodation, on a scale of 1 to 9, where 1 represents the 'worst possible room' and 9 'my ideal room'. An example is provided at the start of the questionnaire as this is not a common questionnaire format. Figure 5.2 gives an example of a profile as presented to participants.

Room C
On mixed gender floor
To have my own room
Sharing toilet and shower with seven other people
Sharing the kitchen with four other people
Room size: 12 square metres (3x4)
Located on campus
In a new building
R4000 per month
Worst Best 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

Figure 5.2: Example attribute profile describing one possible room, including rating scale

A mathematical model was applied which assumes that the like/ dislike ratings can be described as a linear function of the manipulated attribute levels. In particular, the assumption is made that a rating of V_{ij} of profile j by individual i can be explained by the following function:

$$V_{ij} = b_0 + \sum b_k X_{ijk} + e_{ij}$$

with X_{ijk} representing the (coded) attribute levels of attributes k(k=1…K, K being the total number of attributes), b_0 and b_k representing parameters to estimate that represent a constant and the attribute 'weights' respectively, and e_{ij} representing the random error term (Oppewal et al., 2005:117).

Chapter Six presents the results of the direct and conjoint analysis processes.

CHAPTER 6
ANALYSIS OF RESULTS AND DISCUSSION

6.1 Introduction

This study, entitled 'Student preferences for accommodation at a Cape Town university: an application of the stated preference approach', largely depended for data on the responses of the students surveyed. Out of the 650 questionnaires distributed, 457 usable responses were returned, yielding a 70.31 per cent response rate. This response is encouraging when compared to a response rate of 50.8 per cent recorded for a student housing study in Braamfontein, Johannesburg, by Ijasan and Ahmed (2016:138). However, similar studies done in Malaysia by Najib et al. (2011:1073) and Khozaei et al. (2014:713) achieved higher response rates of 82.5 and 91.79 per cent, respectively.

The researcher did not explore the relationship between the sample and the university population as the aim of this research was to measure students' preferences rather than how the representative of the university population the sample was.

Of the 457 respondents, 440 completed almost every question. The balance of 17 failed to respond from question 4 to the end, but completed most of questions 1, 2 and 3. It was decided to retain these responses as the researcher deemed them important.

In order to address the research objectives of this study as presented in Chapter One, Chapter Six is divided into three components. First, the socio-demographic profile of the respondents is presented and discussed, followed by the accommodation preferences of respondents as derived from direct measurement, including their willingness to pay (WTP). The third part features the results of the conjoint analysis.

6.2 Socio-demographic profile of the respondents

Previous studies on student housing indicate that socio-demographic background is often used to explain and predict student housing preferences.

Based on a questionnaire designed by Oppewal et al. (2005), in this research the following socio-demographic variables were introduced: 1) age, 2) gender, 3) level of course, 4) country of origin, 5) first language, 6) religion, 7) population group, 8) academic course, 9) faculty, 10) years already spent at CPUT, 11) years already lived in student accommodation, 12) who pays for the accommodation?

Table 6.1: Age of Respondents

Age	Frequency	Percentage (%)
18-23	371	85.1
24-26	58	13.3
Older than 26	7	1.6
Valid	436	100.0

(n=436)

The age of respondents generally maps well to the general student population, with the majority of the participants (85.1 per cent) in the 18-23 age band, 13.3 per cent in the age band 24-26, and only 1.6 per cent older than 26 (Table 6.1). The mean age was 21.52 with a standard deviation of 1.98.

Table 6.2: Gender of respondents

Gender	Frequency	Percentage (%)
Female	291	65.8
Male	151	34.2
Valid	442	100.0

(n=442)

Accounting for 65.8 per cent of the findings, the views of females have been slightly overrepresented (Table 6.2). The preponderance of female participants is not unusual, however, and in line with international student housing studies such as that by Khozaei et al. (2014:714) in Malaysia. Of the university's student population as a whole, 55.1 per cent are female (CPUT, 2017:58).

Table 6.3: Gender and age of Respondents

Age Group * Gender Cross tabulation					
			Gender		Total
			F	M	
Age Group	Up to 23 years	Count	257	114	371
		% within Gender	89.5%	76.5%	85.1%
	24 - 26 years	Count	30	28	58
		% within Gender	10.5%	18.8%	13.3%
	27 years or older	Count	0	7	7
		% within Gender	0.0%	4.7%	1.6%
Total		Count	287	149	436
		% within Gender	100.0%	100.0%	100.0%

(n=436)

It is evident from Table 6.3 that the vast majority of the 257 female respondents (89.5 per cent) and the majority of the 149 male respondents (75.5 per cent) interviewed were in the age group of up to 23 years of age.

Table 6.4: Level of Course

Course level	Frequency	Percentage (%)
Undergraduate	401	92.0
Postgraduate	35	8.0
Valid	436	100.0

(n=436)

The vast majority of surveyed respondents (92.0 per cent) were registered for an undergraduate course (Table 6.4). This is representative of the university population, where undergraduate students make up 93.4 per cent of the total enrolments (CPUT, 2017:58).

Table 6.5: Country

Country	Frequency	Percentage (%)
South Africa	439	99.8
Africa	0	0
Europe	1	0.2
Other	0	0
Valid	440	100.0

(n=440)

Nearly all respondents (99.8 per cent) have spent most of their lives in South Africa (Table 6.5).

Table 6. 6: First Language (multiple response allowed)

First language	Frequency	Percentage (%)
Xhosa	330	75.0
Xhosa and English	26	5.9
Zulu	24	5.3
English	12	2.7
Tswana	9	2.0
South Sotho	8	1.8
Other	31	7.1
Valid	440	100.0

(n=440)

As illustrated in Table 6.6, most respondents (75.0 per cent) reported Xhosa as their first language; 5.9 per cent both Xhosa and English; 5.3 per cent Zulu; 2.7 per cent English; 2.0 per cent Tswana; 1.8 per cent South Sotho; the remaining 7.1 per cent indicating indigenous languages such as Venda, Tsonga, Swazi, North Sotho, Ndebele and Afrikaans, or other African and European languages.

Regarding their level of English, on a scale from 1-9 (with 1 – not good at all, 9 – excellent) the majority of respondents (72.2 per cent) perceived theirs as 6 and above.

Table 6.7: Religion

Religion	Frequency	Percentage (%)
Christian	413	94.1
No religion	18	4.1
Muslim	5	1.1
Other	3	0.7
Valid	439	100.0

(n=439)

Table 6.7 shows that the vast majority of respondents (94.1 per cent) reported their religion as Christian; 4.1 per cent no religion; 1.1 per cent Muslim.

Table 6.8: Population group

Population group	Frequency	Percentage (%)
Black	438	99.5
Coloured	2	0.5
Valid	440	100.0

(n=440)

Nearly all (99.5 per cent) the respondents surveyed were Black (Table 6.8), although Blacks make up only 65 per cent of student enrolments (CPUT, 2017:58).

Table 6.9: Academic course

Academic course	Frequency	Percentage (%)
Real Estate	92	21.5
Management	53	12.4
Accounting	44	10.3
Public Management	43	10.0
Information Systems	23	5.4
Tourism and Events Management	22	5.1
Entrepreneurship	21	4.9
Marketing	19	4.4
Retail Business Management	17	4.0
Other	94	22.0
Valid	428	100

(n=428)

As illustrated in Table 6.9, the largest group of respondents comprised real estate students (21.5 per cent). This bias could be explained by the survey's being conducted by students from the real estate department. The second biggest group comprised management students (12.4 per cent) followed by accounting (10.3 per cent), public management (10.0 per cent), information systems (5.4 per cent), tourism and events management (5.1 per cent), entrepreneurship (4.9 per cent), marketing (4.4 per cent) and retail business management (4.0 per cent). The remaining 22.0 per cent of the respondents were spread fairly evenly over a variety of CPUT courses.

Table 6.10: Faculty

Faculty	Frequency	Percentage (%)
Business and Management Sciences	347	80.1
Applied Sciences	44	10.2
Informatics and Design	31	7.1
Engineering and the Built Environment	10	2.3
Education	1	0.2
Valid	433	100

(n=433)

Table 6.10 shows that the respondents were mainly from the Faculty of Business and Management Sciences (80.1 per cent), which is not surprising as this is the largest faculty with 37.4 per cent of total enrolments (CPUT, 2017:58). Furthermore this faculty is situated on the District Six campus, the site of the study, with the real estate students conducting the survey being registered within this faculty. Of the sample, 10.2 per cent of the respondents were from the Faculty of Applied Sciences, 7.1 per cent from Informatics and Design, 2.3 per cent from Engineering and the Built Environment and 0.2 per cent from the Faculty of Education.

Table 6.11: Years already spent at CPUT

Years	Frequency	Percentage (%)
1	78	17.8
2	210	47.9
3	101	23.1
4	38	8.7
5	9	2.1
More than 5	2	0.5
Valid	438	100

(n=438)

The data in Table 6.11 indicates that the vast majority (82.1 per cent) of respondents had already spent at least two years at CPUT, and 11.3 per cent four years or more.

Table 6.12: Years already lived in student accommodation

Years	Frequency	Percentage (%)
1	132	31.4
2	183	43.5
3	81	19.2
4	21	5.0
5	4	1.0
Valid	421	100

(n=421)

According to the data in Table 6.12, 31.4 per cent of respondents had spent one year or less in student accommodation, with 68.6 per cent having spent two years or more.

Table 6.13: Who pays the room rent?

Who pays?	Frequency	Percentage (%)
The student	10	2.5
The parents	55	13.7
Both student and parents	6	1.5
NSFAS	315	78.6
Bursary	14	3.5
Other	1	0.2
Valid	401	100

(n=401)

As illustrated in Table 6.13, the room rent for the vast majority of respondents (82.1 per cent) was covered by bursaries such as NSFAS (78.6 per cent), with a minority having the parents (13.7 per cent), the student (2.5 per cent), or both student and the parents (1.5 per cent) paying for the room.

Being concerned about the cost of living while staying at university, on a scale from 1-9 (with 1 – not worried at all, 9 – extremely worried), the vast majority (80.1 per cent) of respondents indicated their level of worry as 5 and above, with 33.3 per cent indicating that they were extremely worried. This is in line with international studies such as the Student Housing Survey in the USA, which also showed the pivotal role that cost plays in students' housing decisions (La Roche et al., 2010:47).

6.3 Current housing situation

Studies in the field of housing decisions usually include questions about the current housing situation (Louviere & Timmermans, 1990; Lindberg et al., 1992; Mulder, 1996; Dieleman, 2001; Lee & Waddell, 2010; Tazelaar, 2017). In this research students were asked to indicate the category encompassing various attributes that best describes the room they had been allocated. The results are summarised in Table 6.14.

Table 6.14: Current housing situation

Current housing situation	Count	Column N (%)	Column Count (%)
On a single gender floor	284	64.7%	9.0%
On a mixed gender floor	97	22.1%	3.1%
I have my own room	76	17.3%	2.4%
I share the room with one student only	320	72.9%	10.1%
I share the room with more than two students	25	5.7%	0.8%
I do not share the toilet and shower with other people	19	4.3%	0.6%
I share the toilet and shower with four people	153	34.9%	4.8%
I share the toilet and shower with seven people	225	51.3%	7.1%
I share the kitchen with more than seven people	256	58.3%	8.1%
I share the kitchen with up to four people	142	32.3%	4.5%
I have my own kitchen	15	3.4%	0.5%
My room is around 18 square metres (3x6)	87	19.8%	2.7%
My room is around 12 square metres (3x4)	197	44.9%	6.2%
My room is around 8 square metres (2x4)	101	23.0%	3.2%
Located on campus	74	16.9%	2.3%
Located 2km from campus	180	41.0%	5.7%
Located 6km from campus	146	33.3%	4.6%
In an old building	160	36.4%	5.1%
In a renovated green building	108	24.5%	3.4%
In a new building	122	27.8%	3.9%
Around R2000 per month	122	27.8%	3.9%
Around R3000 per month	199	45.3%	6.3%
Around R4000 per month	60	13.7%	1.9%

Table 6.14 shows that the majority of respondents (64.7 per cent) live on a single gender floor. The majority (72.9 per cent) share their room with one student only, 17.3 per cent have their own rooms and only 5.7 per cent share the room with more than two students. More than half of the respondents (51.3 per cent) share a shower and toilet with seven people, 34.9 per cent share with four people and only 4.3 per cent have their own toilet and shower. More than half of the respondents (58.3 per cent) share the kitchen with more than seven people, 32.3 per cent with up to four people and only 3.4 per cent have their own kitchen. Regarding room size, 44.9 per cent have a room of around 12 square metres (3x4), 23.0 per cent around 8 square metres (2x4) and 19.8 per cent around 18 square metres (3x6). Only 16.9 per cent of respondents are located on campus, with the majority (74.3 per cent) being located between 2km and 6km from campus. The data indicated that 36.4 per cent of respondents live in an old building, 27.8 per cent in a new building and 24.5 per cent in a renovated green building. The majority of respondents (73.1 per cent) pay R3000 per month or less for their room, and 13.7 per cent pay around R4000 per month.

Furthermore, as illustrated in Table 6.15, the majority of respondents (52.2 per cent) live on the middle floor of a building, 27.2 per cent on the top floor and 20.6 per cent on the ground floor.

Table 6.15: Which floor

Floor	Frequency	Percentage (%)
Ground floor	80	20.6
Middle floor	203	52.2
Top floor	106	27.2
Valid	389	100

(n=389)

Regarding how much they like or dislike their room, on a scale from 1-9 (with 1 – Worst possible room, 9 – My ideal room) the majority of students (83.8 per cent) perceived their room as 5 and above, while 8.3 per cent perceived theirs as the ideal room.

Based on the information that they had about student accommodation at CPUT, students were asked to indicate their three most and three least preferred options. A list of options was given. Table 6.16 indicates respondents' preferred student accommodation options on the CPUT District Six campus.

Table 6.16: Student accommodation options at CPUT

Most and least preferred accommodation		Frequency	Percentage (%)
TOP THREE	Cape Suites	106	24.7
	City Edge	80	18.6
	New Market Junction	47	10.9
BOTTOM THREE	Hanover Street	49	11.4
	St Peters	42	9.8
	Catsville	65	15.0

(n=431)

The preferred student accommodation option for 24.7 per cent of respondents at CPUT was Cape Suites, followed by City Edge (18.6 per cent) and New Market Junction (10.9 per cent). The bottom three were St Peters (9.8 per cent), Hanover Street (11.4 per cent) and Catsville, which at 15.0 per cent was indicated as the least preferred accommodation option (Table 6.16).

6.4 Accommodation preferences for various attributes

This section of the questionnaire measured the average preference of respondents for various student housing attributes.

6.4.1 Importance of accommodation attributes

The respondents' accommodation preferences were determined by examining a variety of preference indicators relating to accommodation attributes. Respondents were asked to indicate the importance of different accommodation attributes in their choice of student

housing. Preferences were indicated on a scale of 1-9, with 1 indicating 'not important at all' and 9 indicating 'extremely important'.

It is generally acceptable to use the results obtained from scale ratings to determine the importance that respondents attach to objects or qualities, in this case, the various attributes of housing (Chau et al., 2006:76). Table 6.17 shows the mean scores of 16 accommodation attributes as rated by the respondents: the bigger the mean value, the higher the perceived importance of the attribute. The 457 response values were computed as scale ratings in order to calculate the mean of the respondents' preferences for different accommodation attributes. To get the mean rating the added averages were divided by 457.

The respondents' mean preference rating for the various accommodation attributes, in order of importance, are featured in Table 6.17.

Table 6.17: Mean preference ratings with order of importance

Accommodation attributes	N Valid	Mean	STD
To have unlimited free WiFi	442	8.45	1.229
To have a 24-hour computer lab in the building	439	8.31	1.347
To have 24-hour on-site security	443	8.26	1.421
To have in-house laundry facilities	444	7.74	1.676
To have a shuttle service to campus	441	7.60	2.147
To have a communal study room in the building	444	7.47	1.922
To have cleaning services for the public areas	437	7.46	1.952
To have my own room instead of sharing it with someone else	441	6.98	2.281
To have a big room	445	6.29	2.187
To have the cheapest room	443	6.28	2.418
To have my own toilet in the room	440	5.98	2.601
To have my own shower in the room	443	5.95	2.564
To have a self-catering kitchen in my room	439	5.81	2.406
To live in a new building	431	5.41	2.510
To have communal DSTV	439	4.96	2.672
To have my own TV in my room	445	4.19	2.743

Table 6.17 shows that CPUT respondents ranked 'to have unlimited free WiFi' (M = 8.45, STD = 1.229), 'to have a 24-hour computer lab in the building' (M = 8.31, STD = 1.347) and 'to have 24-hour on-site security' (M = 8.26, STD = 1.421) as the three most important accommodation attributes.

It comes as no surprise that unlimited free WiFi featured as the most important attribute in students' accommodation decisions. This confirms the results of various international student housing studies as discussed in Chapter Three. In a USA study by La Roche et al. (2010:48), for the majority of respondents (92.9 per cent) no internet access was considered a "deal breaker" in the housing decision and in a UK study on student housing preferences at the

University of Nottingham ‘broadband and telephone connection in study bedrooms’ rank as the top feature expressing preferences (Survey Unit, 2008:5). Respondents in a study of 752 residence students at a public university in Malaysia also reported free internet access as the most preferred facility in the residence halls (Khozaei et al., 2011a:7336). Khozaei et al. (2011a) propose that the importance of internet access from the perspective of students might be due to the key role of internet on various aspects of students’ life, such as study, research and communication. According to the College Planning and Management magazine in the USA all new residences built in 2000 had to have internet access in students’ rooms (Herman Miller Inc., 2007:4).

The results of this research confirms the results of various studies that emphasises the importance of internet access for daily life for different types of people, including office workers, travellers and students. (Khosaiei et al., 2010).

The second attribute, ‘to have a 24-hour computer lab in the building’ is in line with the emerging international trend for students enrolled at universities to expect easy access to computer laboratories. “Access” to resources is a prerequisite in “resource based learning” the term for introduction of technology in teaching (Arambewela & Hall, 2009:563).

The high ranking of security indicates how crucial the issue of safety is in students’ accommodation decisions, and is also in line with international trends. As discussed in various studies in Chapter Three, 24/7 security is ranked as a high priority (Angelo & Rivard, 2003:26-27). When asked to rank the most important consideration in choosing housing, according to the study by La Roche et al. (2010:48) the importance of security features was ranked as the top priority and in the University of Nottingham study (Survey Unit, 2008:6) as a high priority. Safety was also indicated as a major concern in an Australian study by Arambewela and Hall (2009:563).

Safety and security issues were followed by the desirability of ‘in-house laundry facilities’ (M = 7.74; STD = 1.676) and ‘a shuttle service to campus’ (M = 7.60; STD = 2.147). The attributes ‘to have a communal study room in the building’ and ‘to have cleaning services for the communal areas’, with a mean value of 7.47 and 7.46 respectively, were ranked next. The relatively high ratings of these attributes confirms the importance of a residential learning community in line with international trends, as discussed in Chapter Three (Angelo & Rivard, 2003:25-26). Studies in the USA indicate that students are asking for more than just technology, and that laundry facilities and security systems are a given nowadays, with common spaces for socialising and studying becoming abundant (Miller, 2007:4). On-site

laundry facilities also scored highly in the study by La Roche et al. where it was considered a "deal breaker" in the housing decision for 84.9 per cent of respondents (2010:48).

Features such as 'to have my own room instead of sharing it with someone else' (M = 6.98; STD = 2.281), 'to have a big room' (M = 6.29); STD = 2.187), 'to have the cheapest room' (M = 6.28; STD = 2.418), 'to have my own toilet in the room' (M = 5.98; STD =2.601), 'to have my own shower in the room' (M = 5.95; STD = 2.564) and 'to have a self-catering kitchen in my room' (M = 5.81; STD = 2.406) were in the middle of the list. This is contrary to the trend towards insistence on privacy and independence in the student housing market in the USA (Angelo & Rivard, 2003:30-31). It is also contrary to the results in the study by La Roche et al. where sharing a bedroom was a 'deal breaker' for approximately half of the respondents (49.3 per cent), having no kitchen for 57.4 per cent of respondents, while only 11.7 per cent regarded sharing a bathroom as a deal breaker (2010:48). In addition, J Turner Research (2013) reports that the most important design features for student respondents, besides price, are a private room, their own bathroom and a large kitchen area. For respondents in the Nottingham study, en-suite facilities were among the most liked features (Survey Unit, 2008:42) and respondents in the study by Oppewal et al. (2005:120) showed a pronounced preference for private facilities. A survey amongst students in Malaysia also indicates that students strongly prefer en suite-style (Khozaei et al., 2014:709), and research which explores the contemporary housing preferences of students in Antwerp confirms a shift towards a preference for individual units with increased privacy (Verhetsel et al., 2016:463).

On the other end of the spectrum, 'to live in a new building', 'to have communal DSTV' and 'to have my own TV in my room', with a mean value of 5.41, 4.96 and 4.19 respectively, were the three most insignificant attributes ranked by respondents. It appears that respondents do not set much store by the presence of such luxuries, instead giving a higher value to more practical room attributes. This agrees with the results reported by Arambewela and Hall (2009:563) in Australia, whose study concludes that international students want basic accommodation at a reasonable cost. However, these results are contrary to the international trend toward luxury in student housing, in terms of which students in the USA increasingly expect facilities such as a pool, sport facilities, etc. in the building in which they live (Angelo & Rivard, 2003:30). This is also contrary to the finding that not having cable TV was a deal breaker for the majority (75.7 per cent) of respondents in the US (La Roche et al., 2010:48).

6.4.2 Students' attitudes towards accommodation

Next respondents were asked attitudinal questions. Respondents had to indicate their degree of agreement with certain statements on a scale from 1-9, with 1 indicating 'absolutely disagree' and 9 'absolutely agree'.

In some disciplines information attained in a quantitative survey from a big population are still considered more trustworthy than the exploration of personal experiences and attitudes of a few individuals in qualitative research (Thomsen, 2008:32). However, attitudes can also be measured to a certain extent in surveys. According to May (1993, as cited in Thomsen, 2008:32) attitude questions can be used to construct profiles of personality types, which can supply information on the attitudes of smaller groups in the population. The insights obtainable from surveys are limited, however. This survey does not give in-depth information about respondents' motivations, which are outside the scope of the researcher's objectives for this thesis. Table 6.18 shows respondents' opinions towards certain statements regarding student accommodation, ranked according to degree of agreement.

Table 6.18: Attitudes/opinions

Statements	N Valid	Mean	STD
I want a convenience shop/ kiosk in the residence	439	7.15	2.030
I want to share showers and toilets with people of my own gender	443	7.14	2.591
I want to be within walking distance of campus	443	6.34	2.584
I want to live on campus	438	6.32	2.468
I want an entertainment room in the residence	442	5.56	2.594
I want a room with a nice view	440	5.53	2.525
I do not want to share the shower and the toilet with other people	444	5.21	2.860
I want a swimming pool in my residence	443	4.77	2.696
I want to share my apartment with people of my own nationality	442	3.35	2.579
I want to share the kitchen with a large number of people	431	3.31	2.082
I want to share my apartment with people of my own race group	438	3.14	2.422
I want to share my apartment with a large number of people	445	2.77	2.206

Table 6.18 indicates that the three statements towards which respondents had the most favourable attitudes were 'I want a convenience shop/ kiosk in the residence' (M = 7.15, STD = 2.030), 'I want to share showers and toilets with people of my own gender' (M = 7.14, STD = 2.591) and 'I want to be within walking distance of campus' (M = 6.34, STD = 2.584). These were followed by 'I want to live on campus' and 'I want an entertainment room in the residence', with a mean value of 6.32 and 5.56, respectively.

The favourable attitude towards a convenience shop/ kiosk in the residence is contrary to the finding by Nijënstein (2012) in the Netherlands indicating that Dutch students do not want a supermarket in or next to their building. Dutch students prefer walking 4 minutes to the nearest

supermarket over walking 1 minute. Studies in the USA, on the other hand, indicate that students require convenience stores and that common spaces for socialising and studying are routinely considered for new student housing project (Herman Miller Inc, 2007:4).

Sharing showers and toilets with people of their own gender emerged as a very important issue for respondents. As noted in the next sections of this chapter, where it was tested whether the preferences differed with classification variables that are important for student housing management, there were differences in students' preferences regarding the sharing of ablutions with people of their own gender based on the socio-demographics of age group, gender and study level.

Location of student housing is a research topic that has received considerable attention and the favourable attitude towards being within walking distance of campus is not unexpected. As Hassanain (2008:217) observes, "student housing facilities should be located in reasonable proximity (i.e. within short walking distance) to teaching, recreational, food-consuming, and car parking facilities."

In the USA study by La Roche et al. (2010), almost half (48.6 per cent) of students actually preferred living off campus, and of those surveyed almost half (47 per cent) assumed that it was more expensive to live on campus than off campus. Being 'close to university' also appears in the top three 'most liked' themes in the Nottingham study, characterised as being at the 'heart of the action' (Survey Unit, 2008:41). In the UK study by Oppewal et al. (2005:122) respondents indicated that distance from campus is the second most influential attribute influencing their preferences regarding university accommodation. For young people such as students, Frones (2003, as cited in Thomsen, 2008:21) names choice of location and proximity to leisure time facilities as aspects that are closely linked to their lifestyle and sense of identity. On the other hand, the high ranking of wanting to live on campus (M = 6.32, STD = 2.486) is contrary to findings in the Longwood student housing survey in the USA, where almost half of the students indicated that they would rather live off campus (La Roche et al., 2010:47).

Attitudes towards having an entertainment room in the residence (M = 5.56, STD = 2.594), having a room with a nice view (M = 5.53, STD = 2.525), sharing the shower and toilet with other people (M = 75.21, STD = 2.860) and having a swimming pool in the residence (M = 4.77, STD = 2.696) were in the middle of the ranking list. Sharing a bathroom is not a very important issue for students, according to the results of a University Business study in the USA, being a deal breaker for only 11.7 per cent of respondents (La Roche et al., 2010:48). But the results obtained from a university in southern England by Oppewal et al. (2005:122)

showed that students are most sensitive to whether they need to share ablution facilities with other students.

On the other hand, it could be seen that respondents strongly disagreed with sharing their apartment only with people of their own nationality (M = 3.35, STD = 2.579), sharing the kitchen with a large number of people (M = 3.31, STD = 2.082), or sharing the apartment only with people of their own race group (M = 3.14, STD = 2.422). Unsurprisingly, with a mean value of 2.77, respondents most strongly disagreed with sharing their apartment with a large number of people.

The findings presented here were supported by the information gathered in the focus group interviews. Even though the researcher could not specify a ranking order, most students referred to attributes linked to convenience, safety, cost and their sense of privacy when it came to choosing accommodation.

The next section presents the relationship between student housing preferences and the socio-demographic profile of the respondents. Previous studies of student housing preferences have indicated differences in students' preferences based on their socio-demographic characteristics (Oppewal et al., 2005; Khozaei et al., 2014; Verhetsel et al., 2016).

6.5 Relationship between student housing preferences for various attributes and socio-demographic variables

In this study the characteristics that predicted student preferences were found to be gender, age group and study level. This coincides with the study of Khozaei et al. (2014:709) at a public university in Malaysia, which reported significant differences based on students' gender, study level and nationality.

During the process of data analysis the variables of student housing preferences were simplified as follows: the importance of accommodation attributes which were indicated on the scale from 1-3 were grouped together into 'not at all important', preferences indicated from 4-6 into 'somewhat important', and preferences indicated from 7-9 as 'very important'. Furthermore, opinions which were indicated on a scale from 1-3 were grouped together as 'disagree', 4-6 as 'neutral' and 7-9 as 'agree'. This was done to decrease the number of cells, thus increasing the validity of the results (Shi, 2005:79).

6.5.1 Gender of respondents

In this study the gender of respondents was found to have an effect on student housing preferences. This finding corroborates the results of Tazelaar's (2017:83) study, in which differences were found in the way in which males and females responded to various housing dimensions. However, this is contrary to the results of Oppewal et al. (2005:121), who found gender to have no effect on students' housing preferences. It is also contrary to results by Amole (2011:52), where gender did not emerge as a predictor of preference for any of the housing dimensions examined. Amole (2011) speculates that the reason why gender appears to be unimportant with regard to students' housing preferences could be related to the stage in the life cycle of users.

Statistically significant relationships were found to exist between the gender of respondents and the importance of the following room attributes: 'to have a self-catering kitchen in my room'; 'to have a communal study room in the building'; 'to have communal DSTV' and 'to have my own TV in my room'.

Furthermore, statistically significant relationships were also found between the gender of respondents and opinions on the following statements: 'I want to share showers and toilets with people of my own gender'; 'I want to share the kitchen with a large number of people'; 'I want a convenience shop/ kiosk in the residence' and 'I want an entertainment room in the residence'. The significant gender differences identified in the study are presented in Tables 6.19 – 6.34.

Table 6.19 indicates the relationship between the gender of respondents and responses to the attribute 'to have a self-catering kitchen in my room'.

Table 6.19: Cross tabulation by gender and 'to have a self-catering kitchen in my room'

			Not at all important	Somewhat important	Very important	Total
Gender	M	Count	17	63	71	151
		% within Gender	11.3%	41.7%	47.0%	100.0%
	F	Count	69	120	102	291
		% within Gender	23.7%	41.2%	35.1%	100.0%
Total		Count	86	183	173	442
		% within Gender	19.5%	41.4%	39.1%	100.0%

Table 6.20 is the Chi-square test for the relationship between these two variables.

Table 6.20: Chi-square for cross tabulation by gender and 'to have a self-catering kitchen in my room'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.567[a]	2	.003
N of Valid Cases	442		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 29.38.

Tables 6.19 and 6.20 indicate a statistically significant relationship between the gender variable and responses to the importance of the attribute 'to have a self-catering kitchen in my room' (χ^2 = 11.567, df = 2, p-value = 0.003). It is evident that a greater percentage of male respondents (47.0 per cent) attached importance to this feature than females did (35.1 per cent). It is also interesting to note that more female respondents (23.7 per cent) ascribed a low degree of importance to the feature, whilst only 11.3 per cent of males deemed it unimportant. However, this is contrary to the results of Tazelaar's 2017 study of young people (including students) in the Netherlands, where females indicated that a private kitchen was very important, but where the presence of a washing machine and a dishwasher within the housing unit were deemed more important to males than females (Tazelaar, 2017:83). If not necessarily for the same reason, the present finding confirms that of Poria and Oppewal (2002:125) in the UK regarding the importance of a kitchen for male students who grew up in the UK.

Table 6.21 indicates the relationship between gender and the attribute 'to have a communal study room in the building'.

Table 6.21: Cross tabulation by gender and 'to have a communal study room in the building'

			Not at all important	Somewhat important	Very important	Total
Gender	M	Count	6	22	123	151
		% within Gender	4.0%	14.6%	81.5%	100.0%
	F	Count	27	62	202	291
		% within Gender	9.3%	21.3%	69.4%	100.0%
Total		Count	33	84	325	442
		% within Gender	7.5%	19.0%	73.5%	100.0%

Table 6.22 is the Chi-square test for the relationship between these two variables.

Table 6.22: Chi-square for cross tabulation by gender and 'to have a communal study room in the building'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.081[a]	2	.018
N of Valid Cases	442		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.27.

Tables 6.21 and 6.22 indicate a statistically significant relationship between gender and the attribute 'to have a communal study room in the building' (χ^2 = 8.081, df = 2, p-value = 0.018).

From Table 6.21 it can be seen that more male respondents (81.5 per cent) placed high importance on this feature than females (69.4 per cent), and more female respondents (30.6 per cent) than males (18.6 per cent) deemed it less important.

Table 6.23 shows the relationship between gender and the room attribute 'to have a communal DSTV'.

Table 6.23: Cross tabulation by gender and 'to have a communal DSTV'

			Not at all important	Somewhat important	Very important	Total
Gender	M	Count	46	45	60	151
		% within Gender	30.5%	29.8%	39.7%	100.0%
	F	Count	110	102	79	291
		% within Gender	37.8%	35.1%	27.1%	100.0%
Total		Count	156	147	139	442
		% within Gender	35.3%	33.3%	31.4%	100.0%

Table 6.24 is the Chi-square test for the relationship between these two variables.

Table 6.24: Chi-square for cross tabulation by gender and 'to have a communal DSTV'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.349[a]	2	.025
Likelihood Ratio	7.228	2	.027
Linear-by-Linear Association	5.913	1	.015
N of Valid Cases	442		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 47.49.

According to Table 6.23, 'to have a communal DSTV' was rated as very important by significantly more male respondents (39.7 per cent) than females (27.1 per cent).

Table 6.25 indicates the relationship between gender and the room attribute 'to have my own TV in my room'.

Table 6.25: Cross tabulation by gender and 'to have my own TV in my room'

			Not at all important	Somewhat important	Very important	Total
Gender	M	Count	65	39	47	151
		% within Gender	43.0%	25.8%	31.1%	100.0%
	F	Count	149	87	55	291
		% within Gender	51.2%	29.9%	18.9%	100.0%
Total		Count	214	126	102	442
		% within Gender	48.4%	28.5%	23.1%	100.0%

Table 6.26 is the Chi-square test for the relationship between these two variables.

Table 6.26: Chi-square for cross tabulation by gender and 'to have my own TV in my room'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.382[a]	2	.015
N of Valid Cases	442		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 34.85.

Tables 6.25 and 6.26 show that there was a statistically significant difference between males and females regarding the importance placed on the attribute 'to have my own TV in my room' (χ^2 = 8.382, df = 2, p-value = 0.015). According to Table 6.25, 31.1 per cent of male respondents regarded having their own TV in their room as important, in comparison to only 18.9 per cent of females. Furthermore, 51.2 per cent of female respondents ranked this attribute as unimportant, in comparison to 43.0 per cent of males.

Table 6.27 shows the relationship between gender and students' opinions on the statement 'I want to share showers and toilets with people of my own gender'.

Table 6.27: Cross tabulation by gender and 'I want to share showers and toilets with people of my own gender'

			Disagree	Neutral	Agree	Total
Gender	M	Count	36	31	84	151
		% within Gender	23.8%	20.5%	55.6%	100.0%
	F	Count	32	38	221	291
		% within Gender	11.0%	13.1%	75.9%	100.0%
Total		Count	68	69	305	442
		% within Gender	15.4%	15.6%	69.0%	100.0%

Table 6.28 is the Chi-square test for the relationship between these two variables.

Table 6.28: Chi-square for cross tabulation by gender and 'I want to share showers and toilets with people of my own gender'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.162[a]	2	.000
N of Valid Cases	442		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 23.23.

Tables 6.27 and 6.28 indicate a statistically significant relationship between gender and attitudes towards the statement 'I want to share showers and toilets with people of my own gender' (χ^2 = 20.162, df = 2, p-value < 0.0005). It is evident from Table 6.27 that the majority of female respondents (75.9 per cent) agreed that they would prefer to share showers and toilets with people of their own gender, compared to only slightly more than half of males (55.6 per cent). Furthermore, 44.3 per cent of males disagreed or were neutral towards sharing these facilities with people of their own gender compared to only 24.1 per cent of female respondents. This quantitative finding is not out of place, as the results are close to what the researcher expected after taking note of the strongly negative reactions of female students regarding the sharing of showers during the focus group interviews. These results are also in line with those of international studies, as discussed in Chapter Three.

Table 6.29 shows the relationship between gender and the opinions of respondents on the statement 'I want to share the kitchen with a large number of people'.

Table 6.29: Cross tabulation by gender and 'I want to share the kitchen with a large number of people'

			Disagree	Neutral	Agree	Total
Gender	M	Count	85	47	18	150
		% within Gender	56.7%	31.3%	12.0%	100.0%
	F	Count	178	96	17	291
		% within Gender	61.2%	33.0%	5.8%	100.0%
Total		Count	263	143	35	441
		% within Gender	59.6%	32.4%	7.9%	100.0%

Table 6.30 is the Chi-square test for the relationship between these two variables.

Table 6.30: Chi-square for cross tabulation by gender and 'I want to share the kitchen with a large number of people'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.149[a]	2	.076
N of Valid Cases	441		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.90.

According to Tables 6.29 and 6.30, there was a weak relationship between gender and students' attitudes towards the statement 'I want to share the kitchen with a large number of people' (χ^2 = 5.149, df = 2, p-value = 0.076). From Table 6.29 it can be seen that 12.0 per cent of male respondents agreed with this statement, compared to only 5.8 per cent of females. In Nijënstein's 2012 study of Dutch students, females also show greater aversion to sharing the kitchen with more than six housemates (Nijënstein, 2012:43). However, it is contrary to the findings of Amole (2011:49), who reported that gender had no effect on Nigerian students' preferences for sharing the kitchenette. A possible explanation for these differences might be the perceived function of the kitchen, with males possibly regarding the kitchen as a place to socialise (see Poria and Oppewal [2002:125], as discussed in Chapter Three).

Table 6.31 indicates the relationship between gender and opinions on the statement 'I want a convenience shop/ kiosk in the residence'.

Table 6.31: Cross tabulation by gender and 'I want a convenience shop/ kiosk in the residence'

			Disagree	Neutral	Agree	
Gender	M	Count	8	50	93	151
		% within Gender	5.3%	33.1%	61.6%	100.0%
	F	Count	31	74	186	291
		% within Gender	10.7%	25.4%	63.9%	100.0%
Total		Count	39	124	279	442
		% within Gender	8.8%	28.1%	63.1%	100.0%

Table 6.32 is the Chi-square test for the relationship between these two variables.

Table 6.32: Chi-square of cross tabulation by gender and 'I want a convenience shop/ kiosk in the residence'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.408[a]	2	.067
N of Valid Cases	442		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.32.

Tables 6.31 and 6.32, above, indicate a positive weak relationship between gender and respondents' attitudes towards having a convenience shop/ kiosk in the residence (χ^2 = 5.408, df = 2, p-value = 0.067). From Table 6.31 it can be seen that 10.7 per cent of female respondents disagreed with this statement, compared to 5.3 per cent of males. Furthermore 33.1 per cent of male respondents were neutral towards this statement, compared to 25.4 per cent of females.

Table 6.33 shows the relationship between gender and opinions on the statement 'I want an entertainment room in the residence'.

Table 6.33: Cross tabulation by gender and 'I want an entertainment room in the residence'

			Disagree	Neutral	Agree	Total
Gender	M	Count	30	51	70	151
		% within Gender	19.9%	33.8%	46.4%	100.0%
	F	Count	79	108	104	291
		% within Gender	27.1%	37.1%	35.7%	100.0%
Total		Count	109	159	174	442
		% within Gender	24.7%	36.0%	39.4%	100.0%

Table 6.34 is the Chi-square test for the relationship between these two variables.

Table 6.34: Chi-square of cross tabulation by gender and 'I want an entertainment room in the residence'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.292[a]	2	.071
N of Valid Cases	442		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 37.24.

According to Table 6.33 and Table 6.34 there was a weak relationship between the gender of respondents and their attitudes towards having an entertainment room in the residence (χ^2 = 5.292, df = 2, p-value = 0.071). Table 6.33 indicates that 46.4 per cent of male respondents agreed with this statement, compared to 35.7 per cent of females. Furthermore, 27.1 per cent of females disagreed, compared to 19.9 per cent of male respondents.

Generally speaking, in international studies regarding student housing preferences, female students have been found to be more concerned than males with having their own kitchen and

bathroom facilities (Nijënstein, 2012:36). Whilst gender does not seem to be significant in the context of some student housing studies – e.g. in the United Kingdom (Oppewal et al., 2005:121) and Nigeria (Amole, 2011:53) – it is certainly significant in other studies internationally (Kakad, 2000; Shrestha, 2000, as cited in Amole, 2011:53).

6.5.2 Age group of respondents

The relationship between student housing preferences and the age group of respondents is examined in this section. As only 1.6 per cent of respondents in this research were older than 26, these respondents were grouped with others and two age groups were created: up to 23 years of age and 24 years or older. Age was found to be a factor linked to preferences, supporting evidence that the students' housing preferences change as they progress through their university careers (Survey Unit, 2008:5; Phillips & Carswell, 2007:170).

Statistically significant relationships were found between the age of respondents and the importance of the attribute 'To have a 24-hour computer lab in the building', as well as opinions on the statements 'I want to share showers and toilets with people of my own gender' and 'I want to share my apartment with people of my own race group'. The significant differences between age and these accommodation preferences are presented in Tables 6.35 to 6.40.

Table 6.35 indicates the relationship between age group and the attribute 'To have a 24-hour computer lab in the building'.

Table 6.35: Cross tabulation by age group and 'To have a 24-hour computer lab in the building'

			Not at all important	Somewhat important	Very important	Total
Age Group	Up to 23 years	Count	18	31	330	379
		% within Age Group	4.7%	8.2%	87.1%	100.0%
	24 years or older	Count	7	2	56	65
		% within Age Group	10.8%	3.1%	86.2%	100.0%
Total		Count	25	33	386	444
		% within Age Group	5.6%	7.4%	86.9%	100.0%

Table 6.36 is the Chi-square test for the relationship between these two variables.

Table 6.36: Chi-square of cross tabulation by age group and 'To have a 24-hour computer lab in the building'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.520[a]	2	.063
N of Valid Cases	444		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 3.66.

Tables 6.35 and 6.36 indicate a positive weak significant relationship between age group and the attribute 'to have a 24-hour computer lab in the building' (χ^2 = 5.520, df = 2, p-value = 0.063). According to Table 6.35 this attribute was not at all important to 10.8 per cent of

respondents in the age group 24 years or older, compared to 4.7 per cent of respondents up to 23 years of age. Furthermore, more of the respondents up to 23 years of age (8.2 per cent) deemed having this facility in the building as only somewhat important, compared to 3.1 per cent of respondents of 24 or older.

Table 6.37 shows the relationship between age group and the statement 'I want to share showers and toilets with people of my own gender'.

Table 6.37: Cross tabulation by age group and' I want to share showers and toilets with people of my own gender'

			Disagree	Neutral	Agree	Total
Age Group	Up to 23 years	Count	53	54	272	379
		% within Age Group	14.0%	14.2%	71.8%	100.0%
	24 years or older	Count	15	15	35	65
		% within Age Group	23.1%	23.1%	53.8%	100.0%
Total		Count	68	69	307	444
		% within Age Group	15.3%	15.5%	69.1%	100.0%

Table 6.38 is the Chi-square test for the relationship between these two variables.

Table 6.38: Chi-square of cross tabulation by age group and 'I want to share showers and toilets with people of my own gender'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.356[a]	2	.015
N of Valid Cases	444		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.95.

Tables 6.37 and 6.38 show that there was a statistically significant relationship between age group and respondents' attitude towards the statement 'I want to share showers and toilets with people of my own gender' (χ^2 = 8.356, df = 2, p-value = 0.015). According to Table 6.37 the majority of respondents up to 23 years of age (71,8 per cent) agreed that they wanted to share showers and toilets with people of their own gender, compared to 53.8 per cent of respondents aged 24 years or older. Furthermore, almost half of the respondents aged 24 or older (46.2 per cent) were neutral towards or disagreed with this statement, compared to only 28.2 per cent of respondents up to 23 years of age.

Table 6.39 indicates the relationship between age group and the statement 'I want to share my apartment with people of my own race group'.

Table 6.39: Cross tabulation by age group and 'I want to share my apartment with people of my own race group'

			Disagree	Neutral	Agree	Total
Age Group	Up to 23 years	Count	239	99	41	379
		% within Age Group	63.1%	26.1%	10.8%	100.0%
	24 years or older	Count	45	9	11	65
		% within Age Group	69.2%	13.8%	16.9%	100.0%
Total		Count	284	108	52	444
		% within Age Group	64.0%	24.3%	11.7%	100.0%

Table 6.40 is the Chi-square test for the relationship between these two variables.

Table 6.40: Chi-square of cross tabulation by age group and 'I want to share my apartment with people of my own race group'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.533[a]	2	.063
N of Valid Cases	444		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.61.

According to Tables 6.39 and 6.40 there was a weak significant relationship between age group and opinions on the statement 'I want to share my apartment with people of my own race group' (χ^2 = 5.533, df = 2, p-value = 0.063). Table 6.39 indicates that 10.8 per cent of respondents up to 23 years of age agreed with this statement, compared to 16.9 per cent of respondents 24 years or older. Of the respondents up to 23 years old, 26.1 per cent were neutral towards this statement, as opposed to 13.8 per cent of respondents 24 years and older.

Having examined differences among students based on gender and age group, it remains to analyse the differences between respondents based on their level of study.

6.5.3 Study level of respondents

This section presents the relationship between student housing preferences and the study level of respondents. Two levels of study were identified, undergraduate and postgraduate.

Comments from postgraduate students at the University of Nottingham indicate that lifestyle differences between undergraduates and postgraduates and the prioritising of quiet study space are among the main concerns when they are choosing accommodation (Survey Unit, 2008:6). The UK study by Oppewal et al. (2005) also indicates that students' level of study strongly influences their preferences for accommodation (Oppewal et al., 2005:121).

No significant relationships between different levels of study and the importance of room attributes were indicated in the results of this current research, other than 'To have cleaning services for the public areas' and 'To live in a new building'. Statistically significant relationships were also found between the study level of respondents and opinions on the

statements ‘I want to share showers and toilets with people of my own gender’ and ‘I want to share my apartment with people of my own race group’. The significant relationships are presented in Tables 6.41 to 6.48.

Table 6.41 indicates the relationship between the study level of respondents and the attribute ‘To have cleaning services for the public areas’.

Table 6.41: Cross tabulation by study level and ‘to have cleaning services for the public areas’

			Not at all important	Somewhat important	Very important	Total
Study Level	Undergraduate	Count	40	76	285	401
		% within Study Level	10.0%	19.0%	71.1%	100.0%
	Postgraduate	Count	3	0	32	35
		% within Study Level	8.6%	0.0%	91.4%	100.0%
Total		Count	43	76	317	436
		% within Study Level	9.9%	17.4%	72.7%	100.0%

Table 6.42 is the Chi-square test for the relationship between these two variables.

Table 6.42: Chi-square of cross tabulation by study level and ‘to have cleaning services for the public areas’

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.532[a]	2	.014
N of Valid Cases	436		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 3.45.

Tables 6.41 and 6.42 indicate a statistically significant relationship between study level and the attribute ‘to have cleaning services for the public areas’ (χ^2 = 8.532, df = 2, p-value = 0.014). According to Table 6.41, compared to 91.4 per cent of postgraduates, only 71.1 per cent of undergraduate respondents regarded having cleaning services for the public areas as very important. On the other hand, 19.0 per cent of undergraduates regarded this as somewhat important, compared to none of the postgraduate respondents.

Table 6.43 shows the relationship between study level and the attribute ‘To live in a new building’.

Table 6.43: Cross tabulation by study level and ‘to live in a new building’

			Not at all important	Somewhat important	Very important	Total
Study Level	Undergraduate	Count	107	162	132	401
		% within Study Level	26.7%	40.4%	32.9%	100.0%
	Postgraduate	Count	13	6	16	35
		% within Study Level	37.1%	17.1%	45.7%	100.0%
Total		Count	120	168	148	436
		% within Study Level	27.5%	38.5%	33.9%	100.0%

Table 6.44 is the Chi-square test for the relationship between these two variables.

Table 6.44: Chi-square of cross tabulation by study level and 'to live in a new building'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.351[a]	2	.025
N of Valid Cases	436		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.63.

Tables 6.43 and 6.44 indicate there was a statistically significant relationship between study levels and the preference for living in a new building (χ^2 = 7.351, df = 2, p-value = 0.025). Table 6.43 indicates that, compared to 45.7 per cent of postgraduates, only 32.9 per cent of undergraduate respondents regarded this as very important. However, 40.4 per cent of undergraduates regarded this as somewhat important, compared to only 17.1 per cent of postgraduate respondents. This is contrary to the result reported by Oppewal et al. (2005:212), in which undergraduates indicated that they preferred a renovated building to a new building.

Table 6.45 indicates the relationship between the study level of respondents and the statement 'I want to share my apartment with people of my own nationality'.

Table 6.45: Cross tabulation by study level and 'I want to share my apartment with people of my own nationality'

			Disagree	Neutral	Agree	Total
Study Level	Undergraduate	Count	231	104	66	401
		% within Study Level	57.6%	25.9%	16.5%	100.0%
	Postgraduate	Count	27	7	1	35
		% within Study Level	77.1%	20.0%	2.9%	100.0%
Total		Count	258	111	67	436
		% within Study Level	59.2%	25.5%	15.4%	100.0%

Table 6.46 is the Chi-square test for the relationship between these two variables.

Table 6.46: Chi-square of cross tabulation by study level and 'I want to share my apartment with people of my own nationality'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.397[a]	2	.041
N of Valid Cases	436		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.38.

Table 6.45 and Table 6.46 indicate that there was a statistically significant relationship between study level and attitude towards the statement 'I want to share my apartment with people of my own nationality' (χ^2 = 6.397, df = 2, p-value = 0.041). According to Table 6.45, 16.5 per cent of undergraduate respondents agreed with this statement, compared to only 2.9 per cent of postgraduates. Furthermore, 57.6 per cent of undergraduate respondents disagreed, compared to 77.1 per cent of postgraduates.

Table 6.47 indicates the relationship between the study level of respondents and the statement 'I want to share showers and toilets with people of my own gender'.

Table 6.47: Cross tabulation by study level and 'I want to share showers and toilets with people of my own gender'

			Disagree	Neutral	Agree	Total
Study Level	Undergraduate	Count	59	60	282	401
		% within Study Level	14.7%	15.0%	70.3%	100.0%
	Postgraduate	Count	9	9	17	35
		% within Study Level	25.7%	25.7%	48.6%	100.0%
Total		Count	68	69	299	436
		% within Study Level	15.6%	15.8%	68.6%	100.0%

Table 6.48 is the Chi-square test for the relationship between these two variables.

Table 6.48: Chi-square of cross tabulation by study level and 'I want to share showers and toilets with people of my own gender'

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.070[a]	2	.029
N of Valid Cases	436		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.46.

According to Tables 6.47 and 6.48 there was a statistically significant relationship between study level and attitudes towards the sharing of showers and toilets with people of one's own gender (χ^2 = 7.070, df = 2, p-value = 0.029). Table 6.47 indicates that, compared to only 48.6 per cent of postgraduates, 70.3 per cent of undergraduate respondents agreed with this statement. Moreover, only 29.7 per cent of undergraduates felt neutral or disagreed, compared to 51.4 per cent of postgraduate respondents.

The above differences support evidence produced by previous studies that students' housing preferences change as they advance through their university careers (Survey Unit, 2008:5). It was interesting to note that, contrary to international research findings where students seem increasingly to desire a private bedroom and bathroom as they get older and further along in their academic experience (Phillips & Carswell, 2007:170), in this research the postgraduates and respondents from the older age group expressed no such desire for private kitchen and bathroom facilities.

Finally, as most researchers have found, preference is contextual (Amole, 2011:53). When the results of this study were analysed and compared with results from different socio-cultural contexts and amongst other age groups, there were clear differences.

To conclude, preferences for some but not all the dimensions of accommodation could be predicted by student characteristics. With the Chi-square analysis no evidence was found of any significant relationship between student housing preferences and the dimensions 'country of origin', 'first language', 'religion', 'population group', 'academic course', 'faculty', 'years already spent at CPUT' and 'years already lived in student accommodation'.

The importance of certain accommodation attributes as evidenced by attitudes and agreement with statements was found to differ among the respondents with respect to gender, age group and study level. These relationships are summarised in Table 6.49.

Table 6.49: The relationship between accommodation preferences and socio-demographic profile

	Age Group	Gender	Study Level
Accommodation Attributes			
To have a 24-hour computer lab in the building	x		
To have communal study room in the building		x	
To have cleaning services for the public areas			x
To have a self-catering kitchen in my room		x	
To live in a new building			x
To have communal DSTV		x	
To have my own TV in my room		x	
Attitudes/ Opinions			
I want a convenience shop/ kiosk in the residence		x	
I want to share showers and toilets with people of my own gender	x	x	x
I want an entertainment room in the residence		x	
I want to share the kitchen with a large number of people		x	
I want to share my apartment with people of my own race group	x		x

No statistically significant relationships were found between any of the other socio-demographics and the accommodation preferences of respondents.

6.6 Willingness to pay (WTP)

In this section the willingness to pay (WTP) on the part of students for upgrading elements of their accommodation is discussed.

6.6.1 Descriptive information about students' WTP

Table 6.50, below, illustrates the students' WTP for upgrading various room attributes, showing their mean and median responses. Borrowing from the study by Poria and Oppewal (2002:122) and adopted for local circumstances, the median was used to assist in distinguishing among three groups of attributes.

Table 6.50: Students' WTP (in Rands) for upgrading their room attributes

How much more would you be willing to pay	N Valid	Mean	Median	STD
To have your own room instead of sharing it with someone else	385	275.92	250	185.871
To have unlimited WiFi	416	227.81	200	154.485
To have 24 hour on-site security	420	254.38	200	184.742
To have a bigger room (to have an 18 sq m instead of an 8 sq m room)	419	210.76	160	180.472
To have your own toilet instead of sharing it with 7 people	425	192.05	150	154.325
To have your own shower instead of sharing it with 4 people	417	191.06	150	163.168
To live in a new building instead of an old building	408	165.38	120	152.124
To share the toilets with 4 people instead of 7 people	417	128.75	100	105.549
To have 4-6 people on a floor instead of 14 people on a floor	414	136.91	100	138.15
To share a shower with 4 people instead of 7 people	406	133.88	100	112.681
To have a bigger kitchen	426	112.25	100	111.213
To have a view of a park instead of a view of another building	427	118.93	80	131.87
To live with people who are from the same ethnic group as yourself	411	68.44	50	84.126
Total willingness to pay more	452	2027.37	**1995**	1089.801

According to Table 6.50, respondents were prepared to pay between nothing and less than R100 extra for the room attributes "To live with people who are from the same ethnic group as yourself" and "To have a view of a park instead of a view of another building". Respondents were prepared to pay more than R100 but less than R200 extra for the following room attributes:

- "To have a bigger kitchen"
- "To share a shower with 4 instead of 7 people"
- "To have 4-6 people on a floor instead of 14 people on a floor"
- "To share toilets with 4 people instead of 7 people"
- "To live in a new building instead of an old building"
- "To have your own shower instead of sharing it with 4 people"
- "To have your own toilet instead of sharing it with 7 people"
- "To have a bigger room ($18m^2$ instead of $8m^2$)"

However, respondents were willing to pay R200 or more extra for the attributes "To have 24 hour on-site security", "To have unlimited WiFi" and "To have your own room instead of sharing it with someone else".

Apart from unlimited WiFi (M = 227.81, STD = 154.485) and having 24 hour on-site security (M = 254.38, STD = 184.742), the attributes for which respondents were prepared to pay most were concerned with private space, e.g. room privacy (M = 275.92, STD = 185.871) and room size (M = 210.76, STD = 180.472), as well as having their own toilet (M = 192.05, STD =

154.325) and shower (M = 191.06, STD = 163.168). This indicates that sharing the space in their room, their living and learning space, was a major concern for students. These results regarding students' private space are in line with those of Poria and Oppewal (2002:123), as discussed in Chapter Three.

The next category concerned attributes linked to the convenience of using the room, e.g. the age of the building (M = 165.38, STD =152.1240), sharing toilets with fewer people (M = 128.75, STD = 105.549), having fewer people living on a floor (M = 136.91, STD = 138.15), sharing a shower with fewer people (M = 133.88, STD = 112.681) or having a bigger kitchen (M = 112.25, STD = 111.213). Students were prepared to pay a little extra for a decent view from a room (M = 118.93, STD = 131.87). However, it was of interest to note that the attribute for which students were prepared to pay by far the least amount extra was "To live with people who are from the same ethnic group as yourself" (M = 68.44, STD = 84.126).

The findings presented here were supported by information gathered during the conversational interviews. These findings correspond to a large extent with those of Poria and Oppewal (2002) discussed in Chapter Three.

6.6.2 Differences in students' WTP based on socio-demographics

Students' socio-demographic characteristics were explored in relation to their WTP. Gender, study level and age were found to be factors linked to students' willingness to pay for upgrading attributes of their accommodation.

6.6.2.1 WTP and gender

Strong differences were found between students based on gender. Whilst it was found that on average male participants indicated a greater WTP more for almost all the attributes mentioned, females were prepared to pay more for sharing the toilets with fewer people and living in a new building rather than an old building. These findings correspond to a certain extent with those of Poria and Oppewal (2002), where it was reported that female students were prepared to pay more for privacy-related attributes and aesthetic appearances. Table 6.51 presents the significant differences based on gender.

Table 6.51: Mean WTP (in Rands) per gender group

	Male	Female	T-test value	Sig. (2-tailed)
To have your own room instead of sharing it with someone else	570.07	482.64	1.011	0.313
To have your own toilet instead of sharing it with 7 people	328.06	302.56	0.589	0.556
To share the toilets with 4 people instead of 7 people	216.92	233.02	-0.513	0.608
To have a bigger room (to have an 18 sq m room instead of an 8 sq m room)	473.62	345.29	1.385	0.168
To have 4-6 people on a floor instead of 14 people on a floor	333.05	267.07	1.367	0.172
To have a view of a park instead of a view of another building	292.15	239.46	1.001	0.317
To live in a new building instead of an old building	355.57	364.89	-0.166	0.869
To share a shower with 4 people instead of 7 people	266.88	256.2	0.255	0.799
To have your own shower instead of sharing it with 4 people	363.27	322.28	0.82	0.413
To live with people who are from the same ethnic group as yourself	241.61	220.49	0.433	0.665
To have a bigger kitchen	247.14	219.98	0.643	0.52
To have unlimited WiFi	361.63	338.17	0.536	0.592
To have 24 hour on-site security	416.94	366.59	1.058	0.291

6.6.2.2 WTP and study level

There were also clear differences among students based on study level. Postgraduate students on average were prepared to pay more for most of the attributes mentioned, while undergraduates were prepared to pay more to have a bigger room and to have a good view from the room. An explanation for this could be that postgraduate students spend more time in their rooms studying whilst undergraduate students spend more time on campus attending classes. The significant differences based on study level are presented in Table 6.52.

Table 6.52: Mean WTP (in Rands) per level of study

	Undergraduate	Postgraduate	T-test value	Sig. (2-tailed)
To have your own room instead of sharing it with someone else	510.18	575.16	-0.488	0.625
To have your own toilet instead of sharing it with 7 people	307.41	376.45	-0.907	0.365
To share the toilets with 4 people instead of 7 people	228.60	234.19	-0.102	0.919
To have a bigger room (to have an 18 sq m room instead of an 8 sq m room)	396.38	367.81	0.21	0.834
To have 4-6 people on a floor instead of 14 people on a floor	288.82	318.33	-0.356	0.722
To have a view of a park instead of a view of another building	260.72	238.71	0.249	0.804
To live in a new building instead of an old building	361.52	386.13	-0.251	0.802
To share a shower with 4 people instead of 7 people	260.61	279.68	-0.261	0.794
To have your own shower instead of sharing it with 4 people	331.80	420.00	-1.024	0.306
To live with people who are from the same ethnic group as yourself	227.79	247.08	-0.235	0.815
To have a bigger kitchen	224.04	313.85	-0.682	0.501
To have unlimited WiFi	338.66	474.69	-0.962	0.343
To have 24 hour on-site security	375.16	539.03	-1.015	0.318

6.6.2.3 WTP and age group

Lastly, the age group of students was found to be a factor linked to preferences. Two age groups were created: up to 23 and 24 and above. It was found that students in the older age

group (24+) were prepared to pay more for all the attributes mentioned. These results are in line with those of Poria and Oppewal (2002), as discussed in Chapter Three. Table 6.53 presents the significant differences between the two age groups.

Table 6.53: Mean WTP (in Rands) per age group

	Up to 23	24+	T-test value	Sig. (2-tailed)
To have your own room instead of sharing it with someone else	441.21	741.69	-1.752	0.084
To have your own toilet instead of sharing it with 7 people	250.96	432.11	-2.214	0.03
To share the toilets with 4 people instead of 7 people	187.89	242.23	-1.115	0.268
To have a bigger room (to have an 18 sq m room instead of an 8 sq m room)	306.14	614.31	-1.68	0.098
To have 4-6 people on a floor instead of 14 people on a floor	207.35	376.57	-2.121	0.037
To have a view of a park instead of a view of another building	184.27	314.92	-1.741	0.086
To live in a new building instead of an old building	276.52	444.69	-1.722	0.089
To share a shower with 4 people instead of 7 people	201.55	344.77	-1.903	0.061
To have your own shower instead of sharing it with 4 people	273.83	389.69	-1.421	0.16
To live with people who are from the same ethnic group as yourself	131.78	201.00	-1.05	0.297
To have a bigger kitchen	156.09	296.92	-1.9	0.062
To have unlimited WiFi	308.83	440.23	-1.59	0.116
To have 24 hour on-site security	339.85	465.31	-1.473	0.145

To conclude, differences in WTP for attributes were found between students based on gender, age group and level of study. With the Independent Samples Test no evidence of differences were found in the context of 'country of origin', 'first language', 'religion', 'population group' 'academic course', 'faculty', 'years already spent at CPUT' and 'years already lived in student accommodation'.

In the next section the outcome of the analysis of the conjoint experiment is discussed, including correlation coefficients, estimation of part-worth utilities, and the relative importance of attributes and attribute effects.

6.7 Conjoint analysis

As discussed in Chapter Five, in this conjoint experiment respondents rated each of several residential profiles separately and expressed the result as a number on a preference rating scale. Thus the overall utility U_j for each residential alternative, j was directly observed. As rating observations in stated preference analysis are commonly assumed to be of interval level measurement, in a regression analysis the dependent variable comprises the observed overall profile ratings, with the coded attribute levels forming the independent variables. Therefore such data is typically analysed using ordinary least square regression analysis (Molin, 2011:132). The data for this conjoint experiment was analysed by applying the general linear

model (analysis of variance) using the conjoint results in SPSS software. The outcomes of the analysis are discussed in the next subsections.

6.7.1 Model estimation

An analysis of variance was conducted in order to estimate the parameters in the linear additive model as discussed in Chapter Five.

The following main-effects model was estimated:

$$V_j = b_0 + \sum b_k X_{ijk} + e_j$$

where V_j is the utility of a particular profile j, b_0 is the regression intercept, the b_k's are the regression coefficients to be estimated for the *k* coded indicator variables X_{jk}, and e_j is an error component (Molin, 1999:47-48).

The estimated model predicts the overall effect of each of the attributes on the responses of the participants. The model fits data well given the disaggregated nature of the data (F = 61.708; p-value < 0.005). The results are shown in Table 6.54.

Table 6.54: Parameter estimates obtained from the general linear model

Dependent Variable:						
Parameter	B	STD	T-test value	Sig. (2-tailed)	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	2.697	0.125	21.618	0.000	2.453	2.942
[GenderMix]	0.345	0.057	6.026	0.000	0.233	0.457
[RoomMates_1]	0.802	0.078	10.293	0.000	0.649	0.955
[RoomMates_2]	0.472	0.080	5.894	0.000	0.315	0.629
[Toilet_1]	1.361	0.066	20.733	0.000	1.232	1.489
[Toilet_2]	0.725	0.066	11.029	0.000	0.596	0.854
[Kitchen_1]	0.412	0.059	6.973	0.000	0.296	0.527
[Kitchen_2]	0.231	0.061	3.801	0.000	0.112	0.351
[RoomSize_1]	-0.084	0.061	-1.385	0.166	-0.203	0.035
[RoomSize_2]	0.030	0.061	0.499	0.618	-0.089	0.150
[Distance_1]	0.441	0.061	7.263	0.000	0.322	0.560
[Distance_2]	0.251	0.061	4.126	0.000	0.132	0.370
[Building_1]	0.045	0.077	0.585	0.558	-0.105	0.195
[Building_2]	0.274	0.086	3.202	0.001	0.106	0.441
[Cost_1]	0.759	0.061	12.511	0.000	0.640	0.878
[Cost_2]	0.551	0.061	9.090	0.000	0.432	0.670

Table 6.54 lists the parameters as estimated for a set of indicator variables that represent the differences between levels within attributes.

> The indicator variables are created using effects coding, which means that for each three-level attribute two indicator variables are constructed. The first level is coded -1 for each indicator variable, the second level is coded 1 for the first indicator variable

> and 0 for the other, and the third level is coded 0 for the first indicator variable and 1 for the second indicator variable. Hence, each indicator variable presents the difference in the means of the observed ratings for two levels of one attribute. For the two-level attribute only one indicator variable is required, which is analogously coded as -1 and 1 for the respective two levels. (Oppewal et al., 2005:119)

Molin (1999:49) states that part-worth utilities indicate the contribution of the attribute levels to the overall utility expressed as the difference from the overall utility. The overall utility in regression analysis is estimated by the regression intercept. Furthermore, the part-worth utilities of the levels 1 to L-1 are directly estimated by the regression parameters, while the part-worth of the L-th level is calculated by the fact that the sum of the part-worth utilities is zero by definition. As only L-1 parameters are estimated, the third column presents only the *t*-values of the first L-1 levels.

The *t*-levels indicate that all estimated parameters are significant at conventional levels ($t > 1.96$, $p < 0.05$), except for the levels of room size. This means that all these levels significantly influence the overall residential preference.

6.7.2 Attribute effects

Although not all indicator variables (level differences) are significant, all attributes have a significant effect on the dependent variable. In order to facilitate the interpretation of effects, the 'part-worth' values of each attribute level from the parameter estimates in Table 6.54 were calculated. The relative contributions of each level to the total predicted score are part-worth values. The sum of the part-worths of all its levels plus the constant of the regression is the total predicted score for any profile (Oppewal et al., 2005:119).

For instance, the part-worth of level one of the first three-level attribute is -1*.802 + -1*0.472 which equals -2.076; the part-worth of the second level is 1*.802 + 1*0.472 or 1.274. The results are presented in Table 6.55, below.

Table 6.55: Estimated effects

Attribute	Level	Part-worth Utility
Floor gender mix	Single gender floor	0.3449
	Mixed gender floor	-0.3449
Roommates	Own room	0.8018
	Sharing the room with one student only	0.4721
	Sharing the room with more than two students	-1.2739
Ablutions	Ablutions in room	1.3607
	Sharing ablutions with four people	0.7249
	Sharing ablutions with seven people	-2.0856
Kitchen	Own kitchen	0.4117
	Sharing with four people	0.2313
	Sharing with more than seven people	-0.6430
Room size	8 square metres	-0.0841
	12 square metres	0.0303
	18 square metres	0.0538
Distance to campus	Located on campus	0.4414
	Located 2km from campus	0.2509
	Located 6km from campus	-0.6923
Building age	New building	0.0448
	Renovated green building	0.2738
	Old building	-0.3186
Cost	R2000 pm	0.7593
	R3000 pm	0.5512
	R4000 pm	-1.3106

The last column in Table 6.55 shows the part-worth utilities of the attribute levels as estimated by regression analysis applying effect coding. Higher utility levels indicate greater preference.

The estimated effects can be interpreted as follows. The regression intercept is equal to 2.697, meaning that the profiles on average have been rated at 2.697 (Molin, 1999:49). Table 6.55 indicates that the part-worth utility for living on a single gender floor is 0.3449 and for living on a mixed gender floor -0.3449, which means that *ceteris paribus*, living on a single gender floor was preferred.

With respect to the attribute ‘room mates’, the table shows that *own room* was preferred with a part-worth utility of 0.8018, decreasing to 0.4721 for *sharing the room with one student only.* The part-worth utility contribution for *sharing the room with more than two students* is fairly large and negative (-1.2739), which means that having more than two roommates was disliked.

Regarding the attribute ‘ablutions’, *ablutions in room* was preferred with a part-worth utility of 1.3607, decreasing to 0.7249 when *sharing ablutions with four people*. The table shows that the part-worth utility for *sharing ablutions with more than seven peop*le is relatively large and negative (-2.0856), meaning that sharing ablutions with more than seven people was disliked.

With respect to the attribute ‘kitchen’, Table 6.55 indicates that *own kitchen* was preferred with a utility of 0.4117, decreasing to 0.2313 for *sharing with four people*. Sharing the kitchen with more than seven people was disliked as indicated by the negative part-worth utility of -0.6430.

Regarding the attribute ‘room size’, the table shows that the part-worth utility for *8 square metres* is relatively small but negative (-0.0841), indicating dislike. Furthermore, although having average ratings of only slightly above zero, *12 square metres* was more preferred with a part-worth utility of 0.0303, with *18 square metres* being the most preferred level with a part-worth utility of 0.0538.

With respect to the attribute ‘distance to campus’, Table 6.55 shows that the part-worth utility for *located 6km from campus* is fairly large and negative (-0.6923), meaning that being far from campus was disliked. The utility contribution for *located 2km from campus* was above average with a part-worth utility of 0.2509 and *located on campus* was the most preferred with a part-worth utility of 0.4414.

With regard to the attribute ‘building’, the utility contribution of *new building* was only slightly above zero at 0.0448, followed by a bigger part-worth utility of 0.2738 for *renovated green building.* The attribute *old building* was disliked as indicated by the negative part-worth utility of -0.3186.

Table 6.55 shows that the overall utility decreased with increasing monthly costs, with the part-worth utility for *R4000pm* being relatively large and negative. *R2000pm* was preferred with a part-worth-utility of 0.7593 followed by *R3000pm* with a part-worth utility of 0.5512.

“The absolute difference between the highest and the lowest part-worth of the levels of a particular attribute is often taken as an indicator of importance of that attribute” (Molin,1999:49). For the model in this research this would mean that ‘ablutions’ is the most important attribute (the absolute difference is equal to 3.4464), followed by ‘room mates’ (2.0758) and ‘cost’ (2.0699). However, Molin (1999:49) suggests that the importance may be conditional on the attribute levels selected. If a smaller range of ablutions attribute levels was selected, for example (say *ablutions in room*, *sharing ablutions with two people* and *sharing ablutions with three people*), then the range in part-worth utilities probably would have been lower, with the possible result that another attribute would have been more important than ablutions. Research has also indicated that the importance increases with the number of levels varied (Currim et al., 1981:72). For example, if the attribute ‘distance to campus’ were varied

in terms of two levels only, the difference between these two attributes would perhaps have been smaller in this model. Consequently, the importance of the distance to campus would have been less. Table 6.56 shows the importance values.

Table 6.56: Importance values

Ablutions	3.4464
Roommates	2.0758
Cost	2.0699
Distance to campus	1.1336
Floor gender mix	0.6897
Kitchen	0.4117
Building age	0.3635
Room size	0.1379

A plot of all the part-worth values is displayed in Figure 6.1. Note that the sum of the part-worth utilities across the levels for each specific attribute is zero (Oppewal et al., 2005:119).

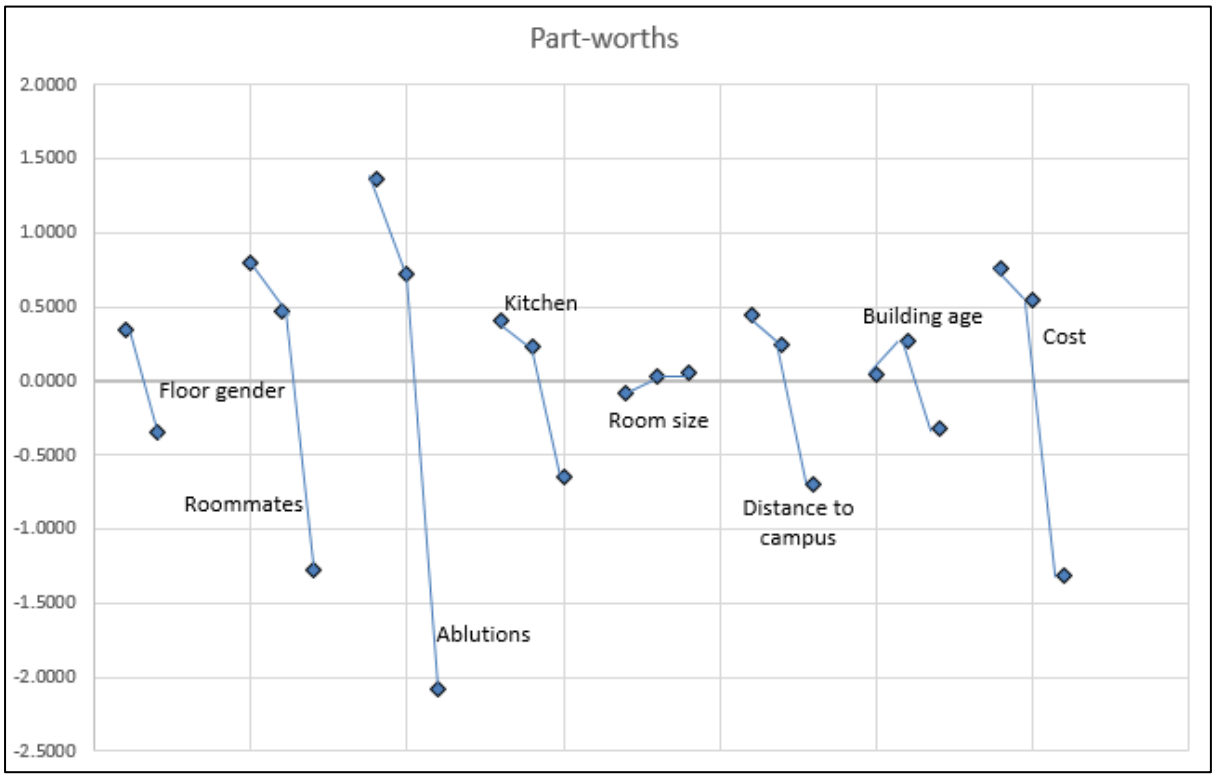

Figure 6.1: Attribute effects as deviations from the overall mean

It is evident from Table 6.56 and Figure 6.1 that, with an importance value of 3.4464, the largest effect occurred in relation to whether ablutions were shared or not. This was followed by number of roommates and monthly rent, which had almost equal importance with importance values of 2.0758 and 2.0699, respectively.

Respondents strongly preferred private facilities. However, as can be seen in Table 6.55 above, the preference decreased sharply if the ablutions were shared with seven students (part-worth utility of -2.0856) instead of four students (part-worth-utility of 0.7249). The issue was clearly not only about having private ablutions or not, but also about the number of people which whom these ablutions had to be shared. This finding corresponds with the study by Oppewal et al. (2005:120).

Respondents also showed a strong preference for having their own room, with preference decreasing sharply from sharing the room with only one student (part-worth utility of 0.4721) to sharing the room with more than one student (part-worth utility of -1.2739), as can be seen in Table 6.55. Again, as in the case of the ablution facilities discussed above, it was evidently not just a question of sharing the room, but also of the number of students with whom the room was shared.

The next most important attribute was 'cost', in terms of the difference between a monthly rent of R2000 and R4000. Respondents unsurprisingly showed a strong preference for lower monthly rent, but within the range of rent amounts the largest effect was observed between R3000 pm and R4000 pm, with preference declining markedly when monthly rental increased from R3000 (part-worth utility of 0.5512) to R4000 (part-worth utility of -1.3106). With the majority of respondents indicating elsewhere in the questionnaire that they were extremely worried about the cost of living while staying at university, it was not surprising that monthly rent had a big effect.

Regarding 'distance to campus', with a total importance value of 1.1336, respondents indicated a strong preference for a room on campus, with preference decreasing sharply as distance from campus increased from 2km (part-worth utility of 0.2509) to 6km (part-worth utility of -0.6923). This could possibly be explained by students still being within reasonable walking distance if the accommodation was located 2km from campus, whereas being located 6km from campus implied being more dependent on public transport. These findings correspond with those of Oppewal et al. (2005), which indicated that at issue was not just the fact of living on campus or not, but also the distance of one's accommodation from campus.

The next most important attribute was gender mix on the floor (importance value of 0.6897), with single gender floors preferred over mixed gender floors. This is contrary to the results of the Oppewal et al. (2005) study, which revealed that students preferred mixed gender floors.

The attribute kitchen sharing was next (importance value of 0.4117), with respondents indicating a preference for having their own kitchen, and preference declining markedly from sharing with four people (a part-worth utility of 0.2313) to sharing the facility with more than seven people (part-worth utility of -0.6430). Again, as was the case with room and ablutions sharing as mentioned above, it was not only a matter of sharing a kitchen, but also of the number of students with whom the kitchen was shared.

For the next attribute, building (importance value of 0.3635), students preferred a renovated green building to accommodation in a new building, but disliked old buildings. This also corresponds with the results of Oppewal et al. (2005:120), where students preferred renovated to new accommodation, but did not like old buildings.

Finally, with an importance value of 0.1379, the size of the room had a relatively small effect. That is, the difference between a room of 8 square metres and 18 square metres had a smaller effect than that of variation in most other attributes. A possible reason for the minor effect of room size is that students had problems visualising the different room sizes in square metres, but it is difficult to draw conclusions without further evidence.

6.7.3 Student differences

Next to be tested was whether the preference differed with classification variables that managers or developers of university accommodation might find important. By including the interactions between the variable and all the attributes in the regression model, effects were tested separately for age, gender, level of study, years spent at CPUT, and years already lived in student accommodation at CPUT. The model showed no improvement in fit when age, level of study, years spent at CPUT, and years already lived in student accommodation at CPUT were added, so they were removed from the model. However, there was a significant effect attaching to the gender of the respondent with the overall rating of profiles ($F = 30.947$, $df = 1$, $p<.005$).

Because all added effects are orthogonal to the effects already included in the model, only the extra parameters are displayed (Table 6.57, below). Significant effects showed up for all the attributes other than room size and age of building.

The only interaction effect was found between gender and ablutions ($F = 3.234$, $df = 2$, $p < 0.05$). The significant difference occurred between males and females with regard to the sharing of ablution facilities with others. The difference between the ratings was greater when the attribute level was sharing with more people.

Table 6.57: Test of attribute effects

Source	df	F	Sig. (2-tailed)
Intercept	1	26443.032	.000
RoomGender	1	36.171	.000
RoomMates	2	58.155	.000
Toilet	2	178.876	.000
Kitchen	2	24.175	.000
RoomSize	2	1.907	.149
Distance	2	24.580	.000
Building	2	9.060	.000
Cost	2	84.392	.000
Gender	1	30.947	.000
Toilet * Gender	2	3.234	.039

There were no significant differences in terms of preference for room size or preference for a new building.

Table 6.58: Parameter estimates for interaction effects of attributes with respondents' gender

Parameter	B	STD	T-test value	Sig. (2-tailed)
Intercept	2.890	.125	23.151	.000
[RoomGender=0]	-.345	.057	-6.014	.000
[RoomMates=-1]	.813	.078	10.425	.000
[RoomMates=0]	.479	.080	5.971	.000
[Toilet=-1]	1.459	.078	18.818	.000
[Toilet=0]	.804	.078	10.372	.000
[Kitchen=-1]	.410	.059	6.946	.000
[Kitchen=0]	.224	.061	3.671	.000
[RoomSize=-1]	-.084	.061	-1.376	.169
[RoomSize=0]	.027	.061	.451	.652
[Distance=-1]	.426	.061	7.002	.000
[Distance=0]	.244	.061	4.016	.000
[Building=-1]	.043	.077	.556	.578
[Building=0]	.277	.086	3.232	.001
[Cost=-1]	.768	.061	12.638	.000
[Cost=0]	.560	.061	9.220	.000
[Gender=1]	.468	.090	5.213	.000
[Toilet=-1] * [Gender=1]	-.306	.126	-2.429	.015
[Toilet=0] * [Gender=1]	-.238	.127	-1.877	.061

Table 6.58 is similar to Table 6.54, with the gender of the respondent and the gender of respondent interaction with ablutions added.

6.8 Summary

In Chapter Six the survey results and findings have been presented and discussed, with the aid of Tables and Figures, in order to achieve the research objectives described in Chapter One. The conclusions of the research study are presented in Chapter Seven, and some recommendations made for future research.

CHAPTER 7
CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter summarises the data analysis contained in Chapter Six and presents the final conclusions of this investigation into student preferences for accommodation at a Cape Town university.

Chapter One outlined the background of the research, explaining its purpose and scope. The aim of the research was to investigate student accommodation preferences at a university in Cape Town in order to ascertain students' accommodation needs. The research was justified on the grounds of its contribution to knowledge and practical importance. To explore the research area, available literature in the larger field of housing research was reviewed in Chapter Two, while in Chapter Three work on student housing preferences was discussed, with reference to both global and local contexts. Chapter Four clarified the research methodology, describing data collection, sampling and statistical methods. The design and modelling approach of the stated preference experiment was discussed in Chapter Five. In Chapter Six the data accumulated was analysed and discussed, focussing on responses to the survey questionnaire. The chapter concluded with a discussion of the research findings to identify the preferences of students and the relationship between housing preferences and the students' socio-demographic profiles.

This chapter summarises the data analysis contained in the previous chapter and formulates conclusions stemming from this. The implications of the findings for theory and management are described. Thereafter the limitations of the research are acknowledged, possible directions for future research are suggested, and overall conclusions are presented.

The conclusions are formulated in terms of the research objectives and the research questions.

7.2 Research findings and conclusions regarding the research objectives and the research questions

The primary research objective was to determine the specific accommodation preferences of full-time students. The secondary objectives as derived from the main objective were:

- To identify the relevant room attributes
- To identify their degree of importance in students' housing preferences

- To determine how much more students are prepared to pay for additionally required features
- To establish how students make trade-offs between room attributes
- To determine the relationship between the housing preferences of students and their socio-demographic characteristics.

The research questions asked in this research were:

- Which room attributes are important in students' housing preferences, and to what degree?
- What is their Willingness to Pay (WTP) for these attributes?
- How do students prioritise features of accommodation?
- Which socio-demographic characteristics explain students' housing preferences, and to what extent?

7.3 Student housing preferences

A person-administered questionnaire survey was conducted in order to explore students' accommodation preferences at a university in Cape Town. Four hundred and fifty-seven questionnaire surveys were successfully administered by real estate students amongst residents living in twelve student residences in the vicinity of the CPUT District Six campus (Cape Suites, Catsville, City Edge, Downtown Lodge, Elizabeth, Hanover Street, J&B, New Market Junction, Plein Street, President House, Sandenburg and St Peters). As it can be assumed that the students have the capacity to understand the survey method and the likely effects of different accommodation attributes, the results of the enquiry ought to be reliable.

The following important conclusions have been reached:

7.3.1 Personal characteristics of the respondents

The majority of the respondents were aged between 18 and 23 years and the vast majority registered for an undergraduate course. Almost all of the respondents had spent most of their lives in South Africa, and most reported Xhosa as their first language and Christianity as their religion. Black students comprised 99.5 per cent of all respondents. Students were registered for a variety of academic courses, mainly in the Faculty of Business and Management Sciences. Almost half of the respondents had already spent two years at CPUT, and a majority of these had spent two years or fewer in student accommodation. The room rent for the vast majority of respondents was covered by bursaries. Finally, cost played an important role in students' housing decisions.

7.3.2 Accommodation preferences using direct measurement

The top three CPUT student accommodation options according to respondents were (in descending order) Cape Suites, City Edge and New Market Junction. The bottom three were St Peters, Hanover Street and Catsville, the latter being the least preferred accommodation option.

7.3.2.1 Relative importance and hierarchical order of importance

Using direct measurement, the researcher determined the relative importance attributed to various accommodation features associated with student housing by a sample of university students in Cape Town. Unlimited free Wi-Fi, a 24-hour computer lab in the building and 24-hour on-site security were perceived by student respondents to be the three most important housing attributes. These were followed by in-house laundry facilities, a shuttle service to campus and a communal study room in the building. Cleaning services for the public areas, one's own room instead of sharing, a big room, the cheapest room, one's own toilet, one's own shower, and a self-catering kitchen appear in the middle and towards the bottom of the ranking list. At the other end of the hierarchy, to live in a new building, to have communal DSTV and to have one's own TV in the room were adjudged the three least important features. It can therefore be concluded that respondents do not place much importance on the presence of luxuries but instead prioritise practical accommodation attributes. It can also be concluded that internet access and security issues are of more concern to students than issues of privacy.

7.3.2.2 Attitudes/ opinions towards student accommodation

Next the respondents' attitudes/opinions towards 12 statements regarding student accommodation were solicited. Students agreed most with the statements concerning the desirability of a convenience shop/kiosk in the residence, sharing showers and toilets with people of their own gender and being within walking distance of campus. These were followed, in the middle of the ranking list, by wanting to live on campus, an entertainment room in the residence, a room with a nice view, sharing the shower and toilet with fewer other people and having a swimming pool in the residence. On the other hand, respondents attached little importance to sharing their apartment with people of their own nationality or their own race group, or sharing a kitchen with a large number of people. Unsurprisingly, respondents most strongly disagreed with sharing their apartment with a large number of people. The attitude of respondents towards a convenience shop or kiosk in the residence may be explained by the lack of shopping facilities in most of the areas in and around the District Six campus where the residences are situated. Issues of safety in the area may also explain the importance attached to this factor, especially given the dangers of walking in the streets at night. The

sharing of showers and toilets with people of their own gender is an important issue, but less so location and entertainment issues, which are placed towards the middle of the ranking list. It might be concluded that these are nice-to-haves, not practical issues such as a convenience shop or sharing showers and toilets with the other gender. As students attend classes at university with people of different nationalities and race groups, it is not surprising that sharing the apartment with people of their own nationality or race group was relatively unimportant to the respondents. Not wanting to share their apartment with a large number of people is self-explanatory, especially as many students spend a lot of their time studying in the apartments.

7.3.2.3 Willingness to Pay (WTP)

The results of the WTP research reveal that, apart from unlimited WiFi and having 24-hour on-site security, those attributes for which respondents were prepared to pay most concerned the individual's private space, e.g. room privacy and room size, as well as having their own toilet and shower. This indicates that sharing the space in their room, the space in which they live and learn, was very important to the students. The next category concerned attributes linked to the convenience of using the room, e.g. the age of the building, sharing toilets with fewer people, having fewer people living on a floor, sharing a shower with fewer people or having a bigger kitchen. Students were prepared to pay little extra to have a view from their room. However, it was of interest to note that the feature for which students were prepared to pay by far the least amount extra was to live with people from the same ethnic group as themselves. To conclude, students were prepared to pay most for the upgrading of features linked to their convenience (WiFi), followed by security and attributes relating to privacy (sharing of room and ablutions).

7.3.2.3 Conjoint analysis

According to the results of the stated preference exercise it can be concluded that all the attributes in the experiment have an influence on students' preferences regarding housing. The results achieved show that students are most sensitive to whether ablutions are shared or not, followed closely by the number of roommates. It is not only a matter of sharing, but also the number of students with whom the facilities or room are shared. The next most influential attribute, which had an importance almost equal to room sharing, was the monthly rent. This was followed by distance from campus and the gender mix on the floor. Sharing a kitchen and the age of the building were relatively less important, with room size being the least significant.

Factors such as gender, age group and study level were found, to varying degrees, to affect the respondents' accommodation preferences.

7.4 The relationship between accommodation preferences and respondents' socio-demographic profile

In the next sections some conclusions are drawn regarding the relationship between students' socio-demographics and their accommodation preferences, starting with the results of the direct measurement techniques.

7.4.1 Importance of accommodation attributes and attitudes/ opinions

From the results reported in Section 6.5 it can be concluded that there is a relationship between accommodation preferences and the gender, age group and study level of respondents.

7.4.1.1 Gender of respondents

Regarding the importance of accommodation attributes, it was found that, compared to females, males showed a strong preference for a self-catering kitchen, having a communal study room in the building, having communal DSTV and having their own TV in their room. Males were also keener to have an entertainment room in the residence. In addition, more males than females were accepting of sharing a kitchen with a large number of people, and more males reported feeling neutral about having a convenience shop or kiosk in the residence. Strangely enough, more females disagreed with this statement, but the researcher could find no reason for this anomaly. Unsurprisingly, compared to males, females more strongly agreed with the statement regarding sharing showers and toilets with people of their own gender.

From the above it can be concluded that there are clear differences in the accommodation preferences of students based on gender. It was found that, generally speaking, privacy issues were more important to female respondents, while male respondents placed more importance on entertainment features.

7.4.1.2 Age group of respondents

It can be concluded from the results in section 6.5.2 that there is a relationship between the age group of respondents and their accommodation preferences. The older group of respondents appeared to find having a 24-hour computer room less important than the younger group of students. This could perhaps be explained by the older students having access to a laptop and not being dependent on public facilities. There is a statistically significant relationship between the sharing of showers with people of their own gender and the age group of students. More of the respondents up to 23 years of age agreed that they wanted to share showers and toilets with people of their own gender, compared to

respondents aged 24 years or older. This could indicate that students from the older age group had acquired coping mechanisms regarding the sharing of showers and toilets with the opposite gender. Furthermore, there is a weak positive relationship between age group and the desirability of sharing an apartment with people of one's own race group. Strangely enough, respondents in the age group 24 years and older are more likely to agree with this statement than respondents up to 23 years of age, but more of the respondents up to 23 years were neutral towards this statement than respondents aged 24 and older.

7.4.1.3 Study level of respondents

Through the results in section 6.5.3 it can be concluded that there is a relationship between the study level of respondents and their accommodation preferences. It was found that, compared to undergraduates, postgraduate students indicated a strong preference for having cleaning services for public areas and living in a new building. On the other hand, compared to postgraduates, more undergraduate students were in favour of sharing their apartment with people of their own nationality and sharing their showers and toilets with people of their own gender. These results confirm evidence from the literature that the housing preferences of students change as they progress through their university careers.

To conclude, preferences for some but not all the dimensions of accommodation could be predicted by student characteristics. With the Chi-square analysis no evidence was found of any significant relationship between student housing preferences and the dimensions 'country of origin', 'first language', 'religion', 'population group' 'academic course', 'faculty', 'years already spent at CPUT' and 'years already lived in student accommodation'.

7.4.2 Differences between students based on WTP

When it came to WTP, it was again found that the students were not a homogenous group. Significant differences in WTP for attributes were found among students, seemingly corresponding to gender, level of study and age group.

7.4.2.1 Gender of respondents

From the results reported in Section 6.6.2.1, it was found that male participants on average were ready to pay more for almost all the attributes mentioned, while female participants were prepared to pay more to share toilets with fewer people and to live in a new building rather than an old one.

7.4.2.2 Study level of respondents

From the results reported in Section 6.6.2.2 it was found that postgraduate students were on average prepared to pay more for most of the attributes mentioned, while undergraduates were prepared to pay more to have a bigger room and to have a good view from the room.

7.4.2.3 Age group of respondents

From the results reported in Section 6.2.3 it was found that students in the older age group (24+) were prepared to pay more for all the features mentioned.

With the Independent Samples Test no evidence of difference was found in the context of students' 'country of origin', 'first language', 'religion', 'population group', 'academic course', 'faculty', 'years already spent at CPUT' or 'years already lived in student accommodation.

7.4.3 Differences between students based on conjoint analysis

From the results of the conjoint analysis tabled in Section 6.7.3 it can be concluded that the model showed no improvement in fit when age, level of study, years spent at CPUT and years already lived in student accommodation at CPUT were added. However, the overall rating of profiles was significantly influenced by the respondent's gender. Significant effects showed up for all the attributes other than room size and age of building. The only interaction effect was found between gender and ablutions. The significant difference occurred between males and females with regard to sharing ablution facilities with others. The difference between the ratings was greater when the attribute level was sharing with more people. Compared to males, females show a strong preference for private ablution facilities and sharing with fewer people.

To conclude, this research showed that students' preferences for accommodation appeared to be influenced by the socio-demographics of age, gender and study level.

7.5 Implications of the research findings

In this section the theoretical and practical implications of the research findings are presented.

7.5.1 Theoretical implications

Research conducted in the field of student housing preferences, as identified in the literature review and summarised in Chapter Three, indicate a lack of research regarding student housing preferences in South Africa. This research covers the specific field of student housing preferences at a university in Cape Town. However, the results might have implications for theory and research using wider-ranging data as well as more sophisticated data analysis

techniques. Other variables were identified from the literature review and focus group interviews. The findings also add to existing theories about, for example, young people's housing preferences and pathways.

Finally, this research concentrates on the South African context where there have been very few such studies. Most research in the field has hitherto focussed on universities in the UK, the USA, Eurasia and even other African countries such as Nigeria.

7.5.2 Managerial implications

In addition to the theoretical implications mentioned above, this research can also contribute to management and marketing practices. Marketers, for example, can alter the way their products are presented to students.

The findings of this research may be helpful in the future design and planning of student housing: for example, offering facilities such as unlimited WiFi, 24-hour security and a 24-hour computer room might make accommodation that is situated some distance from campus more attractive to students, including providing a convenience shop or kiosk. Offering gender-specific ablution facilities would also be popular with female students.

Identifying students' accommodation preferences should also lead to better management of student housing. From a managerial viewpoint the results can be used to assist the managers of student accommodation by creating a fit between students' accommodation preferences and the kind of accommodation made available to them. Students could be allocated according to personal characteristics, e.g. age group, gender or level of studies. The result should be higher levels of student satisfaction as well as more efficient use of accommodation.

7.6 Research limitations

Any type of research will have limitations, and some minor limitations were identified in this study. The decision to research a certain topic or aspect necessarily means downgrading other options. Housing research is a wide field with a diversity of facets. The main focus in this study has been student preferences for university accommodation, which is only one perspective that might be explored to discover the importance of accommodation features for students. Others include the views of student housing developers, student housing managers at CPUT and architects, and these were not considered. They might have provided information from other angles, perhaps informed by their experience with previous projects, knowledge of economic constraints and what is practically feasible.

In terms of socio-demographics, the results are based on a fairly homogeneous population of students. Moreover, the research focused on the accommodation preferences of students studying in one city in South Africa. Although the students come from different parts of South Africa, the findings of the research might not hold for students in other cities. Thus, since the results are based on data collection at university residences on only one campus at a university in Cape Town, they cannot provide a general picture of student housing in South Africa and as such they must remain speculative. Another limitation is that the sample included only students who were already renting a room in one of the CPUT student housing developments in the vicinity of the District Six campus. Other students, e.g. students living in private housing or living in student housing on other CPUT campuses, were not included. Consequently the results may not be generalisable to the whole student population.

Another limitation of the study is that only a limited number of accommodation attributes were taken into account in the survey. Moreover, the scenarios presented to students in the conjoint analysis experiment were built around only eight attributes, with each attribute having two or three levels. Not all the attributes and their possible levels that students might take into account were examined. Furthermore, the experimental guide used in this research did not allow for measuring the importance of particular combinations of attributes or attribute levels. It might be that some attributes only have an effect when combined with certain other attributes. As a result there could be more attributes that influence students' accommodation preferences than those included. These might be the subject of further research. A few complaints were received regarding the design of the questionnaire, especially with respect to the attribute trade-off questions, which some respondents found tiresome.

Furthermore, although the researcher tried to make sure that the findings were both reliable and valid, some possible limitations must be acknowledged. The research addressed student housing preferences in South Africa, with limited literature available. The scales used in the measurement of preferences were largely obtained and then modified from a model pertaining to a study in the United Kingdom. The ability of these scales to reflect the complexities of measurement in South Africa has not been cross-examined sufficiently.

Attention is drawn to these limitations merely for the benefit of improving future research, and is not intended to detract from the significance of the results. Despite its limitations this research makes a useful contribution to the understanding of students' accommodation preferences.

7.7 Recommendations for further research

Despite several studies addressing student housing, knowledge is still lacking regarding students' real requirements and needs. The reason for this could be that in many such studies students have been asked to express their thoughts on their current accommodation, not their preferred accommodation. Thus there is room for further studies focussing more on the housing preferences of students. Research in other settings might enhance the possibility of generalising the results of this study. It would in any case be of interest to research if and how students' accommodation preferences vary across different cities and types of students.

In the bigger picture of the development of student housing, perspectives other than those of students are also important. With this thesis focusing on students' views, the perspectives of other parties involved in student housing development such as developers, architects and managers would add useful depth and variety.

7.8 Conclusions

This research has enabled a clearer and richer understanding of South African university students' preferences for a range of accommodation attributes, and of how these relate to certain differences among types of students. The study has also made a contribution to the field of environmental behavioural research, applying quantitative analysis to the data collected and utilising various statistical methods to do so.

In summary, this research established students' accommodation preferences at a university in Cape Town.

The direct measurement findings revealed that practical issues such as unlimited free WiFi, a 24-hour computer lab and 24-hour on-site security turned out to be the most important issues that influence respondents' accommodation preferences. In addition, students had the most favourable attitudes towards practical arrangements such as the presence of a convenience shop or kiosk in the residence, sharing showers and toilets with people of their own gender and being within walking distance of campus. Regarding WTP, the findings revealed that, apart from unlimited WiFi and having 24-hour on-site security, the attributes for which respondents were prepared to pay most concerned the individual's private space. The indication was that sharing the space in their room, the space where they lived and learned, was very important to students.

The conjoint analysis findings revealed that the sharing of ablution facilities and number of roommates were the most important factors for students when making housing decisions.

Respondents strongly preferred private facilities and rooms, and sharing with fewer students. Monthly rent was also a major factor.

The results indicated some heterogeneity in student housing preferences, and revealed that the differences can be explained to varying degrees by the socio-demographic variables of gender, age group and study level.

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APPENDICES

Appendix A: Questionnaire to participants

Dear CPUT Student

This questionnaire investigates students' preferences towards the rooms in university accommodation. The findings of this questionnaire may help the management of the accommodation at the Cape Town University of Technology to provide students (like you) with better services.

In this questionnaire you are asked in most questions to tick/circle the answer which best describes your opinion. There are no right or wrong answers. The questionnaire should take no more than 20 minutes.

Some of the scenarios and questions look similar; however all of them are different, therefore please carefully read each scenario and question before answering them.

This study is conducted by Property Marketing students from the Department of Real Estate at the Cape Town University of Technology. This questionnaire is part of an assignment and counts toward their year mark.

Your answers will be held in strict confidence.

In case you have any question regarding this questionnaire please do not hesitate to contact Sarita Joubert-Edwards at edwardss@cput.ac.za, 021 460 3386.

Thank you for your co-operation!

SCREENING QUESTIONS		
Are you currently a registered student at CPUT?	Yes	Continue
	No	Dismiss and recruit new respondent
Are you currently living in student accommodation?	Yes	Continue
	No	Dismiss and recruit new respondent
Have you previously completed this questionnaire?	No	Continue
	Yes	Dismiss and recruit new respondent

Having read all of the above, I hereby give my informed consent.

_____ _____

Signature Date

Please fill in the following details:

Your name:	
Your student no:	
Your email:	
Your mobile no:	
Which building:	

In the next table you are asked to indicate how important the following room attributes are for you. Number **1** represents **not at all important** and number **9** represents **extremely important.** Please **circle** the number that best describes your answer.

		Not at all important ↓								Extremely important ↓
Q1.1	**To have a big room**	1	2	3	4	5	6	7	8	9
Q1.2	**To have my own shower in the room**	1	2	3	4	5	6	7	8	9
Q1.3	**To have the cheapest room**	1	2	3	4	5	6	7	8	9
Q1.4	**To have my own toilet in the room**	1	2	3	4	5	6	7	8	9
Q1.5	**To have cleaning services for the public areas**	1	2	3	4	5	6	7	8	9
Q1.6	**To live in a new building**	1	2	3	4	5	6	7	8	9
Q1.7	**To have my own room instead of sharing it with someone else**	1	2	3	4	5	6	7	8	9
Q1.8	**To have a 24-hour computer lab in the building**	1	2	3	4	5	6	7	8	9
Q1.9	**To have unlimited free WiFi**	1	2	3	4	5	6	7	8	9
Q1.10	**To have 24-hour on-site security**	1	2	3	4	5	6	7	8	9
Q1.11	**To have in-house laundry facilities**	1	2	3	4	5	6	7	8	9
Q1.12	**To have a shuttle service to campus**	1	2	3	4	5	6	7	8	9
Q1.13	**To have a self-catering kitchen in my room**	1	2	3	4	5	6	7	8	9
Q1.14	**To have communal study room in the building**	1	2	3	4	5	6	7	8	9
Q1.15	**To have communal DSTV**	1	2	3	4	5	6	7	8	9
Q1.16	**To have my own TV in my room**	1	2	3	4	5	6	7	8	9

In the next table you are asked to indicate how much you agree or disagree with the following statements. The number **1** indicates **absolutely <u>disagree</u>**, the number 9 represent **absolutely <u>agree</u>**. Please **circle** the number that best describes your opinion.

		Absolutely disagree ↓								Absolutely agree ↓
Q2.1	**I want to share my apartment with a large number of people**	1	2	3	4	5	6	7	8	9
Q2.2	**I want to live on campus**	1	2	3	4	5	6	7	8	9
Q2.3	**I want a room with a nice view**	1	2	3	4	5	6	7	8	9
Q2.4	**I want to share the kitchen with a large number of people**	1	2	3	4	5	6	7	8	9
Q2.5	**I want to share my apartment with people of my own nationality**	1	2	3	4	5	6	7	8	9
Q2.6	**I do not want to share the shower and the toilet with other people**	1	2	3	4	5	6	7	8	9
Q2.7	**I want to be within walking distance of campus**	1	2	3	4	5	6	7	8	9
Q2.8	**I want to share my apartment with people of my own race group**	1	2	3	4	5	6	7	8	9
Q2.9	**I want a swimming pool in my residence**	1	2	3	4	5	6	7	8	9
Q2.10	**I want a convenience shop/kiosk in the residence**	1	2	3	4	5	6	7	8	9
Q2.11	**I want an entertainment room in the residence**	1	2	3	4	5	6	7	8	9
Q2.12	**I want to share showers and toilets with people of my own gender**	1	2	3	4	5	6	7	8	9

Assuming that the price of the **cheapest and simplest** room in the residence is **2000 Rand per month,** how much would you be willing to pay extra for the following attributes? (Please read all the statements before answering and write your answers in the right column and remember…everything **adds up** to the total price of the room).

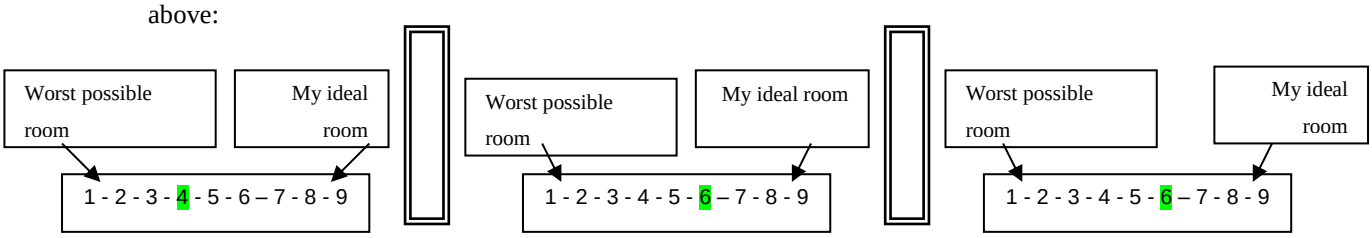
How much will you pay EXTRA….			
	Example: to have a bigger window	**X**	**Rands**
Q3.1	To have your own room instead of sharing it with someone else		**Rands**
Q3.2	To have your own toilet instead of sharing it with 7 people		**Rands**
Q3.3	To share the toilets with 4 people instead of 7 people		**Rands**
Q3.4	To have a bigger room (to have an 18 square metre room instead of an 8 square metre room)		**Rands**
Q3.5	To have 4-6 people on a floor instead of 14 people on a floor		**Rands**
Q3.6	To have a view of a park instead of a view of another building		**Rands**
Q3.7	To live in a new building instead of an old building		**Rands**
Q3.8	To share a shower with 4 people instead of 7 people		**Rands**
Q3.9	To have your own shower instead of sharing it with 4 people		**Rands**
Q3.10	To live with people who are from the same ethnic group as yourself		**Rands**
Q3.11	To have a bigger kitchen		**Rands**
Q3.12	To have unlimited WiFi		**Rands**
Q3.13	To have 24 hour on-site security		**Rands**

In the next section you are presented with six scenarios, which include descriptions of three **different** rooms in the residences. For each of the descriptions you are asked to circle the number that best shows how much you like or dislike the room (**1** represents **The worst possible room** and **9** represents **My ideal room**). Following that, you are asked to **tick** the room that you would prefer to stay in if these were the only rooms available. **Your only other alternative** is to give up the option of living in the accommodation and invest time and money to look for housing elsewhere. *The scenario presented below is **an example** of a student who judged **Room A** as **4**, **Room B** as **6** and **Room C** as **6**. When asked to choose between the four options (the three possible rooms and 'finding accommodation elsewhere'), he/she chose Room C as the most preferred option.*

Example

Room A	**Room B**	**Room C**
In mixed gender floor	In mixed gender floor	In mixed gender floor
Sharing the room with one student only	Sharing the room with more than two students	To have my own room
Sharing toilet and shower with seven other people	With toilet and shower in the room	With toilet and shower in the room
Have my own kitchen	Have my own kitchen	Sharing the kitchen with four other people
Room size: 8 square metre (2X4)	Room size: 8 square metre (2X4)	Room size: 12 square metre (3X4)
Located 6 KM from campus	Located 1 KM from campus	Located on campus
In a renovated green building	In an old building	In a new building
R4000 per month	R3000 per month	R2000 per month

Please **circle/tick** the number that best describes how much you like or dislike **each** of the rooms described above:



If you have to choose among these options, which one will you choose **(please tick)**:

☐ I will choose room **A**

☐ I will choose room **B**

☐ I will choose room **C**

☐ I will give up the option of living in the accommodation and I am are ready to invest time and money to look for housing elsewhere (outside the accommodation)

Now it's your turn to choose!

Scenario number 1

Room A	Room B	Room C
In mixed gender floor	In mixed gender floor	In mixed gender floor
To have my own room	To have my own room	To have my own room
With toilet and shower in the room	Sharing toilet and shower with four other people	Sharing toilet and shower with seven other people
Have my own kitchen	Sharing the kitchen with more than seven people	Sharing the kitchen with four other people
Room size: 18 square metre (3X6)	Room size: 8 square metre (2X4)	Room size: 12 square metre (3X4)
Located 6 KM from campus	Located 2KM from campus	Located on campus
In an old building	In a renovated green building	In a new building
R2000 per month	R3000 per month	R4000 per month

Please **circle/tick** the number that best describes how much you like or dislike **each** of the rooms described above:

Worst possible room — My ideal room

Q4.1 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

Worst possible room — My ideal room

Q4.2 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

Worst possible room — My ideal room

Q4.3 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

If you have to choose between these options, which one will you choose **(please tick)**:

Q4.4 ☐ I will choose room **A** ☐ I will choose room **B** ☐ I will choose room **C**

Q4.5 ☐ I will give up the option of living in the accommodation and I am are ready to invest time and money to look for housing elsewhere (outside the accommodation)

Scenario number 2

Room A	Room B	Room C
In mixed gender floor	In mixed gender floor	In mixed gender floor
Sharing the room with one student only	Sharing the room with one student only	Sharing the room with one student only
With toilet and shower in the room	Sharing toilet and shower with four other people	Sharing toilet and shower with seven other people
Sharing the kitchen with more than seven people	Sharing the kitchen with four other people	Have my own kitchen
Room size: 12 square metre (3X4)	Room size: 18 square metre (3X6)	Room size: 8 square metre (2X4)
Located 2KM from campus	Located on campus	Located 6KM from campus
In a new building	In an old building	In a renovated green building
R2000 per month	R3000 per month	R4000 per month

Please **circle/tick** the number that best describes how much you like or dislike **each** of the rooms described above:

Worst possible room — My ideal room

Q5.1 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

Worst possible room — My ideal room

Q5.2 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

Worst possible room — My ideal room

Q5.3 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

If you have to choose between these options, which one will you choose **(please tick)**:

Q5.4 ☐ I will choose room **A** ☐ I will choose room **B** ☐ I will choose room **C**

Q5.5 ☐ I will give up the option of living in the accommodation and I am are ready to invest time and money to look for housing elsewhere (outside the accommodation)

Scenario number 3

Room A	Room B	Room C
In mixed gender floor	In mixed gender floor	In mixed gender floor
Sharing the room with more than two students	Sharing the room with more than two students	Sharing the room with more than two students
With toilet and shower in the room	Sharing toilet and shower with four other people	Sharing toilet and shower with seven other people
Sharing the kitchen with four other people	Have my own kitchen	Sharing the kitchen with more than seven people
Room size: 8 square metre (2X4)	Room size: 12 square metre (3X4)	Room size: 18 square metre (3X6)
Located 2KM from campus	Located on campus	Located 6KM from campus
In an old building	In a renovated green building	In a new building
R4000 per month	R2000 per month	R3000 per month

Please **circle/tick** the number that best describes how much you like or dislike **each** of the rooms described above:

Worst possible room — My ideal room

Q6.1 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

Worst possible room — My ideal room

Q6.2 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

Worst possible room — My ideal room

Q6.3 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

If you have to choose between these options, which one will you choose **(please tick)**:

Q6.4 ☐ I will choose room **A** ☐ I will choose room **B** ☐ I will choose room **C**

Q6.5 ☐ I will give up the option of living in the accommodation and I am are ready to invest time and money to look for housing elsewhere (outside the accommodation)

Scenario number 4

Room A	Room B	Room C
In single gender floor	In single gender floor	In single gender floor
To have my own room	To have my own room	To have my own room
With toilet and shower in the room	Sharing toilet and shower with four other people	Sharing toilet and shower with seven other people
Sharing the kitchen with four other people	Have my own kitchen	Sharing the kitchen with more than seven people
12 square metre (3X4)	18 square metre (3X6)	8 square metre (2X4)
Located 6KM from campus	Located 2KM from campus	Located on campus
In a renovated green building	In a new building	In a new building
R3000 per month	R4000 per month	R2000 per month

Please **circle/tick** the number that best describes how much you like or dislike **each** of the rooms described above:

Worst possible room — My ideal room

Q7.1 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

Worst possible room — My ideal room

Q7.2 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

Worst possible room — My ideal room

Q7.3 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

If you have to choose between these options, which one will you choose **(please tick)**:

Q7.4 ☐ I will choose room **A** ☐ I will choose room **B** ☐ I will choose room **C**

Q7.5 ☐ I will give up the option of living in the accommodation and I am are ready to invest time and money to look for housing elsewhere (outside the accommodation)

Scenario number 5

Room A	Room B	Room C
In single gender floor	In single gender floor	In single gender floor
Sharing the room with one student only	Sharing the room with one student only	Sharing the room with one student only
With toilet and shower in the room	Sharing toilet and shower with four other people	Sharing toilet and shower with seven other people
Have my own kitchen	Sharing the kitchen with more than seven people	Sharing the kitchen with four other people
Room size: 8 square metre (2X4)	Room size: 12 square metre (3X4)	Room size: 18 square metre (3X6)
Located on campus	Located 6KM from campus	Located 2KM from campus
In a new building	In an old building	In a renovated green building
R3000 per month	R4000 per month	R2000 per month

Please **circle/tick** the number that best describes how much you like or dislike **each** of the rooms described above:

Worst possible room / My ideal room	Worst possible room / My ideal room	Worst possible room / My ideal room
Q8.1 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 -	Q8.2 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9	Q8.3 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

If you have to choose between these options, which one will you choose **(please tick)**:

Q8.4 ☐ I will choose room **A** ☐ I will choose room **B** ☐ I will choose room **C**

Q8.5 ☐ I will give up the option of living in the accommodation and I am are ready to invest time and money to look for housing elsewhere (outside the accommodation)

Scenario number 6

Room A	Room B	Room C
In single gender floor	In single gender floor	In single gender floor
Sharing the room with more than two students	Sharing the room with more than two students	Sharing the room with more than two students
With toilet and shower in the room	Sharing toilet and shower with four other people	Sharing toilet and shower with seven other people
Sharing the kitchen with more than seven people	Sharing the kitchen with four other people	Have my own kitchen
Room size: 18 square metre (3X6)	Room size: 8 square metre (2X4)	Room size: 12 square metre (3X4)
Located on campus	Located 6KM from campus	Located 2KM from campus
In a renovated green building	In a new building	In a new building
R4000 per month	R2000 per month	R3000 per month

Please **circle/tick** the number that best describes how much you like or dislike **each** of the rooms described above:

Worst possible room / My ideal room	Worst possible room / My ideal room	Worst possible room / My ideal room
Q9.1 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8	Q9.2 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9	Q9.3 1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9

If you have to choose between these options, which one will you choose **(please tick)**:

Q9.4 ☐ I will choose room **A** ☐ I will choose room **B** ☐ I will choose room **C**

Q9.5 ☐ I will give up the option of living in the accommodation and I am are ready to invest time and money to look for housing elsewhere (outside the accommodation)

Where do you live now?

Please tick for each attribute the category that best describes or comes closest to the room you have been allocated to:

Q10.1		In a **single** gender floor	Q10.3		I **have** my **own** room
Q10.2		In a **mixed** gender floor	Q10.4		I **share** the room with **one** student only
			Q10.5		I **share** the room with more than **two** students

Q10.6		I **do not share** toilet and shower with other people	Q10.9		I s**hare the kitchen with more than seven people**
Q10.7		I **share** toilet and shower with **four** people	Q10.10		I s**hare the kitchen with up to four other people**
Q10.8		I **share** toilet and shower with **seven** people	Q10.11		I **have my own kitchen**

Q10.12		My **room** is around **18 square metre (3X6)**	Q10.15		Located **on campus**
Q10.13		My **room** is around **12 square metre(3X4)**	Q10.16		Located **2KM** from campus
Q10.14		My **room** is around **8 square metre (2X4)**	Q10.17		Located **6KM** from campus
Q10.18		In an **old building**	Q10.21		Around **R2000** per month
Q10.19		In a **renovated green building**	Q10.22		Around **R3000** per month
Q10.20		In a **new building**	Q10.23		Around **R4000** per month

Q10.24		On the **ground** floor		In the **middle** floors		On the **top** floor

Please **circle/tick** the number that best describes how much you **like or dislike** your room:

Q10.2	Worst possible room	1 - 2 - 3 - 4 - 5 - 6 – 7 - 8 - 9	My ideal room

Based on the information that you currently have about the student accommodation at the Cape Town University of Technology you are now asked to indicate your three most and three least preferred options. A list of the various options is given here.

Cape Suites		Downtown Lodge Res-Zonnebloem		New Market Junction (Southpoint)		Sandenburgh Res - Zonnebloem
Catsville (Groote Schuur)		Elizabeth Women's Residence (Gardens)		Plein Street (South Point)		St Peters Residence - Block A
City Edge Residence		J&B Residence - Zonnebloem		President House (Southpoint)		Hanover Street Residence
Other:						

In the table below please indicate your top three and bottom three **student accommodation options** in order of preferences.

			Please write the **accommodation names** below
Q11.1	Top	1	
Q11.2		2	
Q11.3		3	
Q11.4	Bottom	10	
Q11.5		11	
Q11.6		12	

The next questions are about **you** as an individual. Can you please **tick** the answer that best describes you, or **fill in** the answer in the appropriate box.

Q12. • How old are you? ☐ Years

Q12. You are ☐ Male ☐ Female

- In which country have you spent most of your life? Please **tick** the appropriate box.

Q13.1	South Africa	
Q13.2	Africa (please specify): _____	
Q13.3	Europe (please specify): _____	
Q13.4	Other (please specify): _____	

- What is your first language? Most dominant if more than one. Please **tick** the appropriate box.

Q14.1	Zulu		Q14.6	Swazi		Q14.11	English	
Q14.2	Xhosa		Q14.7	South Sotho		Q14.12	Afrikaans	
Q14..3	Venda		Q14.8	North Sotho		Q14.13	Other European Language	
Q14.4	Tswana		Q14.9	Ndbele		Q14.14	Other (specify): _____	
Q14.5	Tsonga		Q14.10	Other African Language				

Q15 • Please circle the number that best describes how you perceive your level of English (1- not good at all, 9 – excellent) 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 -

Q16 Your religion is ☐ Christian ☐ Hindu ☐ Jewish ☐ Muslim

☐ No religion ☐ Other (please specify) _____

Your population group is:

Q17 ☐ Black ☐ White ☐ Coloured ☐ Asian

☐ Other (please specify):_____

Q18 • How worried are you about the cost of living while staying at university (1- not worried at all, 9-extremely worried) 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9

Q19 • You are registered for an ☐ Undergraduate course ☐ Postgraduate course

Q20 Please write the title of the academic course you are engaged in

Q21 In which department?

Q22 • How many years have you **already spent** at the Cape Town University of Technology? ☐ Year/s

Q23 • How many years have you **already lived** in student accommodation at the Cape Town University of Technology? ☐ Year/s

- Who pays for you room rent? Please tick:

Q24.1	I pay for the room		Q24.4	NSFAS	
Q24.2	My parents pay for the room		Q24.5	Bursary (specify): _____	
Q24.3	Both my parents and I pay for the room		Q24.6	Other (specify): _____	

Q25. If you have any comments about this questionnaire please write them below:

Please take a moment to check if you have answered all the questions in the questionnaire

Thank you very much. Your contribution is greatly appreciated.

And good luck with your studies.

Please give the questionnaire back to the Real Estate Student.

Name of Real Estate Student:	
Student Number:	

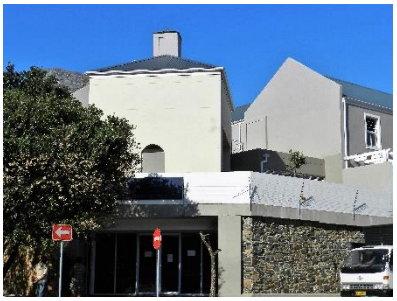
Appendix B: Photographs of CPUT student housing

Cape Suites 1

Cape Suites 2

Catsville 1

Catsville 2



City Edge 1

City Edge 2

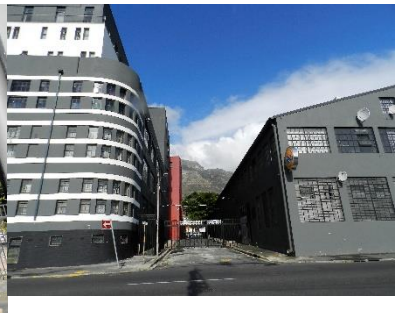
EWR 1

EWR 2

EWR 3

New Market Junction 1

New Market Junction 2



New Market Junction 3

New Market Junction 4

Plein Street South Point 1

Plein Street South Point 2

Plein Street South Point 3

Sandenberg Residence 1

Sandenberg Residence 2

St Peters Residence 1

St Peters Residence 2

Appendix C: Ethical clearance certificate CPUT

P.O. Box 1906 • Bellville 7535 South Africa •Tel: +27 21 4603291 • Email: fbmsethics@cput.ac.za
Symphony Road Bellville 7535

Office of the Chairperson Research Ethics Committee	Faculty: BUSINESS AND MANAGEMENT SCIENCES

At a meeting of the Faculty's Research Ethics Committee on **20 February 2018**, Ethics Approval was granted to **Sarita Edwards (212230611)** for research activities of **Master of Marketing** at the University of the Cape Peninsula University of Technology.

Title of dissertation/thesis/project:	STUDENT PREFERENCES FOR UNIVERSITY ACCOMMODATION IN CAPE TOWN: AN APPLICATION OF THE STATED PREFERENCE APPROACH Lead Researcher/Supervisor: Dr. N E Haydam

Comments:

Decision: APPROVED

	16 April 2018
Signed: Chairperson: Research Ethics Committee	Date

Clearance Certificate No | 2018FBREC513