PROJECT TITLE:

OFF-CAMPUS STUDENT HOUSING PREFERENCES:

CASE STUDY – NEGERI SELANGOR

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ABSTRACT

This research aims to identify the attributes of housing preferences among Malaysian university students, thus enabling insight towards the formation of an Off-Campus Student Housing Preferences Framework in the Malaysian context specifically in the State of Selangor. This is in view of evidence that student accommodation is commonly insufficient to cater for the enrolled students. The objectives of this research are 1. to identify the off-campus student housing preferences and its attributes for dwelling purpose; 2. to identify the differences in student housing preferences between IPTS students and IPTA students; 3. to investigate the relationship between variables of student profiles and housing preferences; and 4. to formulate a structural model reflecting off-campus student housing preferences. Collection of primary data was via two sets of structured questionnaires in Likert-scale type questions distributed randomly among on and off-campus students in selected public and private universities located within the State of Selangor. Survey was conducted among 735 respondents comprising undergraduate students. Literature reviews revealed that student preferences are reflected thus: distance (time taken, transportation mode, facilities and amenities), housing type and rental tenure, student's style (personal style, crowdedness, lighting, air-conditioning, hot water supply, laundry, bathroom, size, and privacy), quality (security and safety), and affordability. Results of the analysis of the framework found that the four main factors to be considered relating to off-campus student housing preferences are location, housing quality, housing accommodation, and housing environment. The researchers recommend an extension study to be conducted in the other states in Malaysia, to obtain a broader perspective of student housing preferences towards designing a national student housing preferences framework.

Keywords: students; framework student housing; housing preferences; housing attributes.

INTRODUCTION

Over the last few decades, the effect of enlarging student population on residential communities has laid discourses of increasing societal impacts (Kinton, 2013). In parallel with Malaysia's National Higher Education Strategic Plans, by the year 2015, it is expected that 50% of the 18 to 30 year old group of population should gain access to tertiary education. Because of this rapid expansion of HEIs, there occurred high concentrations of students in residential areas located close to university campuses (Thuraiya et al., 2014).

The obvious question here is, is every university able to accommodate the enrolled students? The idea of most university students living on-campus is no longer viable. Evidence from numerous studies reported that the number of students enrolling in tertiary institutions is far greater than the available student accommodation (Thuraiya et al., 2014; Hilmy et al., 2013; Khozaei et al., 2012). Holloway et al. (2010) mentioned that housing the off-campus is a dilemma exercised by all universities across the United Kingdom. The Housing Market Analysis (2011) study by the University of Maryland also reported that students have to rent from private housing within the locality of their campuses because of the inadequacy of student accommodation provided by the university.

Findings from a study by Dasimah et al. (2010) on the negative impacts of studentification showed off-campus students often bring side effects not only to the physical condition of the rented house, but also to the local communities. Some of the effects are traffic congestion, air pollution, vandalism, noise pollution, "khalwat" and not managing the garbage disposal. A house is one of the essential needs of living (Jiboye, 2009). As the off-campus students enter into new levels of learning, they are moving away from their hometowns to new places. This transitional period cause them to find themselves in new housing conditions. Housing conditions can influence a student's academic performance (Thomsen and Eikemo, 2010; Korevaar, 2004). Conditions such as house regulations, overcrowding, roommate incompatibility, tenant-landlord disputes or rising rents can affect students' academic performance. Thus, it is essential to house the off-campus students with adequate accommodation by taking into consideration their preferences to bring the students' ability to full potential (Allis et al., 2011).

PROBLEM STATEMENT

As different groups of society have different preferences and needs, it is crucial to identify the off-campus student housing preferences as they are often taken as the economically determinant group of people (Tan, 2012; Thomsen and Eikemo, 2010; Murray et al., 2004). With changing student population distributions unfolding in many cities in developed countries, many local authorities cooperate with universities and local governments to enable the development of student housing. For example, Purpose Built Student Accommodation (PBSA) in

Canada, House of Multiple Occupations (HMOs) in United Kingdom and other off-campus student lounges in Germany.

However in Malaysia, student housing is still bound to the management of the universities. Students have the silent power to say what are the preferences and needs they desire for a living. Interestingly, the development of off-campus student housing has still not been sought in partnership with private developers, universities or the local governments (Hilmy et al., 2013; Khozaei et al., 2012). With limited sources of income, off-campus students have to deal with the rising rents of private housing rental, and to cut cost on housing rental expenses they have to live with multiple occupations to reduce the rental paid per person (Thuraiya et al., 2014). Additionally, they need to forgo comfort and must accept the low standard of living. It is here that this research seeks to make contribution to develop an off-campus student housing preferences which can later give significant inputs towards the formation of Student Housing Guidelines in the Malaysian context.

Thus, the research questions that arise out of these observations are:

1. What are the student housing preferences?
2. What is the relationship between student profiles and housing preferences?
3. How do public housing preferences and student profiles influence student housing preferences?

RESEARCH OBJECTIVES

The aim of this research is identifying the attributes of off-campus student housing preferences to give a significant input for the development of an off-campus student housing preferences structural model. This structural model will become a blueprint for property investors and stakeholders to be used in providing demand-oriented housing.

The objectives of this research are listed below:

1. To identify off-campus student housing preferences for dwelling purposes;
2. To identify the differences of student housing preferences between IPTS students and IPTA students;
3. To investigate the relationships between various variables of student profiles and housing preferences; and
4. To formulate a structural model reflecting off-campus student housing preferences.

LITERATURE REVIEW

One of the six thrusts of the National Education Strategic Plan (NESP) that was launched in 2007 aimed at enhancing Higher Educational Institutions' (HEIs') admission capacities and internationalisation. In line with the National Mission 2006 - 2020, it is expected that 50% of 18 to 30 year-olds of the active population should gain access to HEIs by the year 2015. Thus, the past few decades have witnessed a rapid expansion of HEIs in Malaysia. There were 69 universities available as at 2010 as compared to only one university in Malaya in 1949: University of Malaya.

The obvious question here is, is every university able to accommodate the enrolled students? Evidence from numerous studies reported that the number of students enrolling at tertiary institutions are far greater than the available student accommodations (Thuraiya et al., 2014; Hilmy et al., 2013; Khozaei et al., 2012). Holloway et al. (2010) mentioned that housing the off-campus is a dilemma exercised by all universities across the United Kingdom. The University of Maryland Student Housing Market Analysis (2011) also reported that students have to rent from private housing within the locality of campuses because of the inadequacy of student accommodation provided by the university. Hilmy et al. (2012) iterated that perception of living space dissatisfaction among students are related to their housing such as limited space for study and social interactions, lack of facilities such as parking, and internet access. According to Lawrence (2006), the physical condition of housing is one of the most important determinants of quality of life and human wellbeing. It refers to various aspects of housing including internal and external conditions. A study by Jiboye (2009) found that tenants' satisfaction level is highest within the dwelling, environmental and management components of public housing.

Although there are several studies on student housing affordability and on-campus housing preferences (Brandon et al., 2008; Cross et al., 2009; Araujo & Murray, 2010; Khozaei, 2012; Hilmy et al., 2013, Verhetsel et al., 2017), literature has been relatively silent on students' housing preferences for off-campus students who rent from private housing units. It is therefore crucial to identify the off-campus students' housing preferences as they are being neglected on accommodation aspect by the universities, let alone the local authorities' housing planning.

Student Housing

Student housing is understood as the accommodation built by the universities on-campus or off-campus for students who study in that particular university (Universities of UK, 2006). In developed countries like UK and Canada, student housing has their own housing policies.

By taking UK and Canada as two appropriate examples, two terms commonly associated with student housing are Houses in Multiple Occupation (HMO) in UK, and Purpose-Built Student Accommodations (PBSA) in Canada. HMO is a part of UK's 2004 Housing Act that regulates and limits the conversion of private rented housing units into student housing. The purpose of this act is to cite the regulation of the importance of health and risk aspects for the occupiers, namely the students who rent that particular HMO (Carr et al., 2007). HMOs, as mentioned by Carr et al., (2007) are being rented to the students who are living off-campus and the management of HMOs is under the universities' responsibilities. The management includes the collection of rent, facilities provided, accommodation matters and regulations. In other words, the universities' management will be fully responsible to manage and maintain HMOs for off-campus students who rent the HMO facilities.

In Malaysia, what is meant by student housing is somewhat Hilmy et al. (2011) referred to as the purpose-built on-campus hostel representing the student housing in Malaysia. These are commonly built with a single room and meant to be occupied by two or more students but offers less quality attributes. Khozaei et al. (2010) argued that student housing is provided and managed by the universities; it can be situated either on-campus or off-campus. These definitions of student housing obviously do not include the private residential housing units rented by the off-campus students, just because it is not the universities' responsibility to manage and provide such market supply.

From the reviews on literature, it can be concluded that in Malaysia the definition of student housing is meant by the unit of buildings provided by the universities on-campus or off-campus (Hilmy et al., 2011; Khozaei et al. 2010) not including private housing rentals. Apparently, HEIs have neglected the off-campus students residing in private housing units, especially on their preferences part.

Students living on campus are decreasing in numbers due to the existing campus facilities not meeting their needs (Yasamina, 2017). As a result, the off-campus students have to find their own housing for a place to stay to be able to access their university campus so that they can finish their studies (Carr et al., 2007). Unfortunately off-campus students do not have a fixed income, as they only rely on educational loans, their parents' financial support, scholarships if available or self-funding (working part time or involved with entrepreneurial activities) (Thuraiya et al., 2014). Thus, off-campus students do not have much influence on the housing market power, and tend to use trade-offs between comfort and privacy in order to reduce the cost of rental expenses (Allis and Ismet, 2011).

Off-Campus Student Housing Preferences Structural model

This review on literature provides some of the background information on students' housing preferences research as well as several studies specific to students' housing preferences. Some of these studies were developed decades ago, but as with this recent research study, they are useful in order to inform this paper's methodology and the formation of the questionnaire instruments.

Off-campus students as defined by Kathleen (2004) are the students who rent private housing outside of the university campus which are not under the management of the university. Living off-campus means living outside the campus whereby the students are not able or choose not to occupy student accommodation provided by the universities whether in on or off-campus student housing (Korevaar, 2004; Universities of UK, 2006; Hubbard, 2009). For this research, the off-campus students are targeted to the university students who rent from private rental housing outside or near the university campuses.
A house is one of the essential needs of living. In a study conducted by Tan (2012), it stressed that house-buyers will prioritise quality of the house followed by safety. However, studies on housing preferences on the entire population are seem to be irrelevant as different groups of people have substantial differences in terms of sources of income, lifestyles and preferences (Korevaar, 2004). A proper way of understanding housing preferences is by identifying the existing sub-markets which may include the employed groups of people, students, or male and female (Rugg and Rhodes,2002).

This study seeks to understand the preferences of off-campus students and consider them as one of the housing sub-markets. This is in light of a few studies that discussed on the student's accommodation preferences (Khozaei et al., 2012; Hilmy et al., 2011), especially for off-campus students who rent private housing units. Housing preferences may apply various limitations in degrees of choices and experiences that relate to their life circumstances (Korevaar, 2004). Students, especially the off-campus students who are the tenants obviously is another sub-market in housing preferences as they have different lifestyles and do not have any fixed income. Thus, for this study of off-campus students' housing preferences, it takes into consideration that students, specifically off-campus students who are the tenants of housing sub-market, constitute a significant respondent profile in order to identify the off-campus students' housing preferences.

The structural model of off-campus students' housing preferences is outlined due to the complexity and large possible variables that may contribute to lengthy elaboration of such preferences. From the problem statement, it was found that studies on students' housing is somewhat scarce (Khozaei et al., 2010), especially for off-campus students' housing preferences. This is due to the fact that in Malaysia, student housing is understood as the accommodation built by the

universities on-campus or off-campus, not including the private rented housing units (Hilmy et al., 2011; Khozaei et al., 2012). Table 1 outlines the variables identified from several students' housing studies that confirmed the suggested structural model. The framework and matrix are not comprehensive in listing the variables, many could be added, but this structural model and matrix should suffice to illustrate the research aims and objectives for this study based on the related students housing preferences.

Table 1: Matrix of off-campus students' housing preferences

	Author	Morgan & McDowell	Rugg & Rhodes	Korevaar	Thomsen & Eikimo	Hilmy et al	Khozaei et al	Seow et al.	Carr et al.	Universities UK	Speechley	D.Amole	Allis	Thuraiya
	Year of Publication	1979	2002	2004	2010	2012	2012	2013	2007	2006	2013	2009	2012	2014
	Country of Study	UK	UK	CAN	UK	MAL	MAL	SG	ENG	UK	UK	NGR	INA	MAL
Variables														
Student Background														
Gender		√		√		√	√					√		√
Year of Study		√		√			√	√		√	√	√		
Financial Resources	Sources of income	√	√	√										√
	Level of income	√		√								√		√
Transportation/Mobility		√	√	√			√							
Housing Preferences														
Location		√	√	√	√	√	√	√						
Rental Costs		√		√	√			√					√	√
Quality of current housing	Household composition	√		√	√	√				√		√	√	
	Furnishes provided	√								√		√	√	
Housing Type				√	√	√			√			√	√	

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Tenure		√		√	√							√		√
Students' Preferences														
Preferred type of housing		√	√	√	√	√								
Housing Aspects	Affordable (Rental)	√		√	√									
	Quality	√		√	√		√					√		
	Size / Privacy	√	√	√	√	√	√					√		
	Security / Safety	√		√			√	√	√	√		√		
	Facilities/ Amenities	√		√	√	√	√	√		√				
	Individual facilities			√		√	√				√			
	Crowdedness	√	√	√	√	√	√		√			√		
	Ability to add personal style			√		√	√							
	Having enough light			√		√	√							
	Social network and friendship			√	√		√			√	√			
Distance/Proximity to University	Time taken	√	√	√	√	√								
	Distance	√	√	√	√	√	√	√						
	Transportation availability	√	√	√	√	√								

(Source: Thuraiya et al., 2014)

Student Background Variables from the Matrix

Based on the matrix from Table 1, demographic background is often used as one of the independent variables to relate with the preferred housing characteristics from previous studies on housing preferences (Morgan & McDowell, 1979; Rugg, Rhodes and Wilcox, 2011; Korevaar, 2004; Universities UK, 2006; Carr et al.., 2007; D.Amole, 2009; Thomsen and Eikimo, 2010; Khozaei et al.., 2012; Hilmy et al.., 2012, Allis and Ismet, 2012; Speechley, 2013; Thuraiya et al., 2014). Furthermore, general housing preferences that constitute the employed people as the respondents also include the demographics as essential for their studies (Soheil, 2009; Tan, 2010). It shows that the background of the students does represent an important variable in measuring several research on student housing; be it satisfaction, accommodation satisfaction or other related studies.

Thus for this research, it seems appropriate to also include student characteristics in the analytical framework as the independent variables components of off-campus students housing preferences. This independent variable (student characteristics) is further discussed according to the following attributes: gender, year of study and transportation.

Housing Preferences

According to Abdullah et al. (2012), different ranges of age will have defined different lifestyles. These lifestyles lead to different choices of housing. Higher institution students can mainly be categorized into on-campus students who live on campus and off-campus students staying outside the campus. Off-campus students are all in fact the sub-market groups that have different preferences which could influence his or her housing preferences (Korevaar, 2004).

Location is one of the variables in housing preferences as many previous research on housing had included this as one of the housing attributes (Morgan and McDowell, 1979; Rugg and Rhodes, 2002; Korevaar, 2004; Thomsen and Eikemo, 2010; Hilmy et al., 2012; Khozaei et al., 2012; Seow et al., 2013). Location of place to reside is often associated with transportation costs, security of jobs, moving expenses and more time for daily activities (Tan, 2012).

Thomsen and Eikemo's (2010) findings indicated that type of tenancy of the housing by students does reflect student preferences. It was found that students who reside off-campus have the options to live with their parents, live in their own property, rent a house or rent a room and the results showed that off-campus students are likely to select a rental house in their duration of study. The results from the research was also supported by research from Hilmy et al. (2011) which found that

students will take into consideration the length of lease/contract and often rent a house or room for dwellings.

There is no ideal type of housing preferred by off-campus students as they search for housing, not anticipating that the house will fulfil their different needs and preferences (Bourne, 1981). This is because, off-campus students often apply trade-offs between satisfactions and needs due to limited sources of income (Korevaar, 2004; Thomsen, 2010; Allis, 2011). Students often take into consideration various aspects of housing and will decide based on their preferences and not necessarily to fulfil their needs. Based on the reviews of students' housing preferences, it was clear that students' housing preferences are always constrained by the levels of income (Korevaar, 2004; Thomsen, 2010; Allis, 2011; Baron, 2013; Thuraiya et al., 2014). Based on general housing demand, households will compare their level of income with their total household costs (Tan, 2012). As argued by Thuraiya et al. (2014), students do not have a fixed income and tend to rely on their educational loans or personal sources of income for living costs. The limitation of sources of income by the sub-market groups (off-campus students) has significant effect to the house of multiple occupations where they tend to reside in high number of occupants and trade-off comfort in order to minimise the cost of rental per person (Thuraiya et al., 2014).

Quality aspect is another important variable that requires reviews on off-campus student housing as it is one of the three main variables in the "Housing Choice Hierarchy" (Korevaar, 2004). A decision on the selection of housing will be based on the quality of the housing and sometimes, may result in paying additional housing rental cost (Thuraiya et al., 2014). Quality of housing is also essential for housing satisfaction (Thomsen, 2010; Hilmy et al., 2012) that could take into consideration the number of household composition and furnishings provided (Morgan and McDowell, 1979; Korevaar, 2004; Thomsen and Eikemo, 2010).

METHODOLOGY

From the reviews on housing preferences, it is appropriate to outline three important variables in modelling the off-campus students housing preferences. The variables are student characteristic as one of the sub-market group (off-campus students), housing preferences, and student preferences. The conceptualisation of the framework is based on the three variables as mentioned earlier (Student background, housing aspect and student preferences). The construction of questionnaire survey includes the importance of location (Morgan, 1979; Rugg& Rhodes 2002; Korevaar, 2004; Universities UK, 2006; Thomsen, 2010; Hilmy et al., 2012; Thuraiya et al., 2014), the importance of housing quality (Morgan, 1979; Rhug& Rhodes 2002; Korevaar, 2004; Universities UK, 2006; Thomsen, 2010; Hilmy et al., 2012; Khozaei et al., 2012; Seow et al., 2013; Speechley, 2013; Thuraiya et al., 2014),

the importance of rental cost, and the importance of housing type (Rugg, Rhodes and Wilcox, 2011; Korevaar, 2004; Amole, 2009; Allis, 2011; Thomsen, 2010). Figure 1.0 below shows the summary of student housing preferences.

HOUSING PREFERENCES

Aspect of Location

Aspect of Rental cost

Aspect of Quality

Aspect of Rental Tenure

STUDENT BACKGROUND

Gender

Academic Year
- Mode of study
- Year of study

Financial Resources
- Sources of Income
- Level of Income

Mode of Transportation

STUDENTS' PREFERENCES

Distance
- Time taken
- Transportation availability
- Facilities
- Amenities

Rental tenure

Student style
- Personal style
- Crowdedness
- Lighting
- Laundry
- Bathroom
- Size
- Privacy

Quality

OFF CAMPUS STUDENTS' HOUSING PREFERENCES

Importance of Location
- Time taken to university
- Proximity to city centre
- Accessibility to facilities and amenities
- Transportation mode

Importance of Rental Cost
- Sources of Income
- Level of Income

Importance of Housing Quality
- Personal style
- Personal things
- Privacy
- Crowdedness
- Utilities (Water, Electricity, Internet Access, Telecommunication)
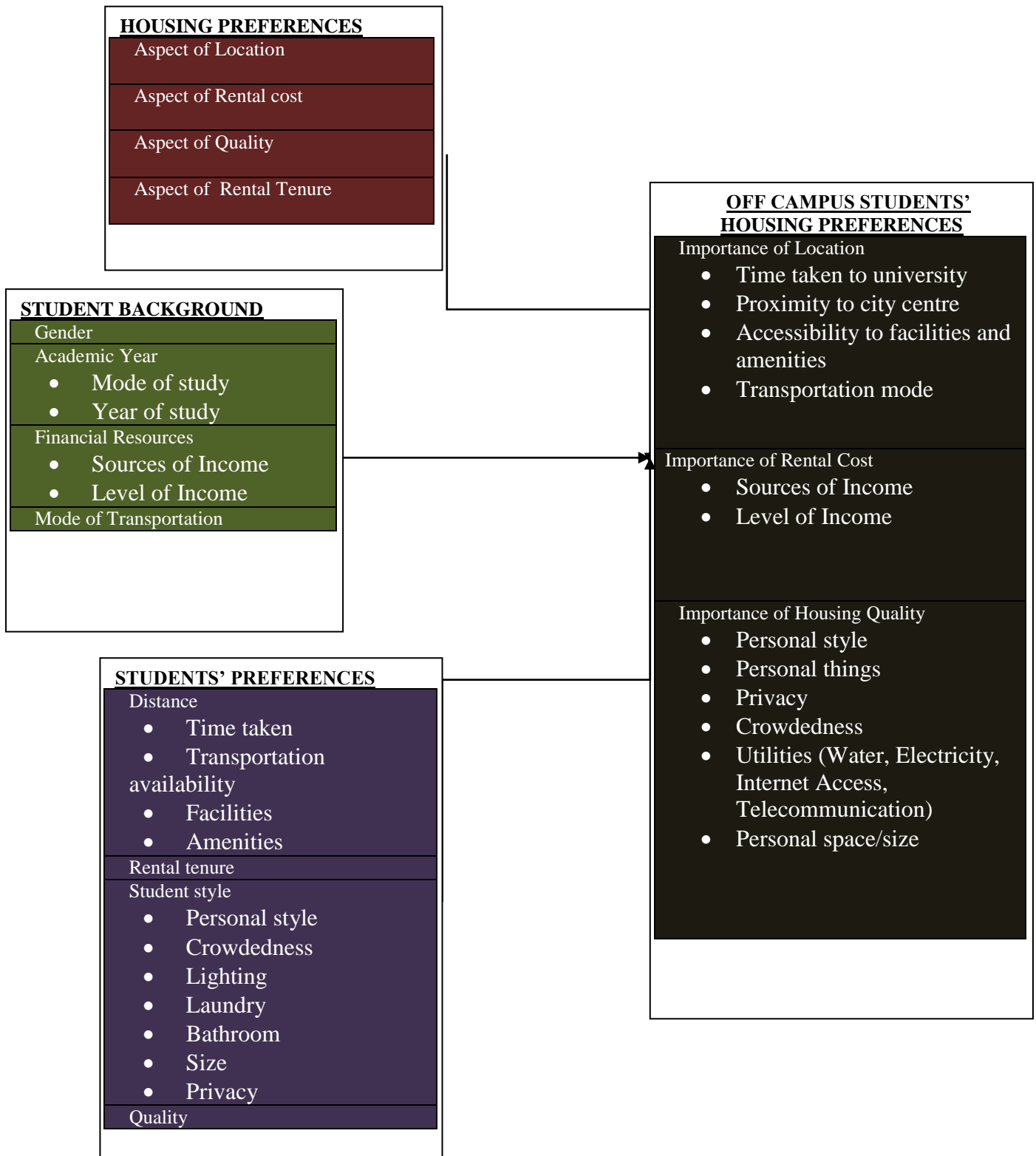- Personal space/size

Figure 1.0: Summary of Off-campus student housing preferences

This research utilizes statistical approaches to achieve the research aim. It starts off as an inquiry into a social problem based on testing a hypothesis or a theory composed of variables, measured with numbers and analysed with statistical procedures in order to determine whether the hypothesis or the theory is met (Creswell, 1994). The research aim is better understood when it is presented as a theoretical framework. A theory is commonly a set of variables and questions that present a systematic view of studentification (for this research) by specifying the relationships between the variables.

This research was conducted in a number of research phases and utilised a variety of research methods to ensure the effectiveness and accuracy of data. Briefly, this research involved five main phases namely preliminary study, literature review, data collection, data analysis and finally the conclusion and recommendation regarding the issue.

First Research Phase: Preliminary study

Preliminary study involves a basic understanding of the research field and issues related to studentification and is more focused to student housing, identifying the background of problems, selecting the appropriate area as a case study, designing questions, aim and objectives of the research and determining the scope, approaches and methods that will be used for this research.

Second Research Phase: Literature review

The literature review for this research will include detailed reviews of empirical and theoretical literature which focus on the background of studentification with more emphasis on the students' residential areas or students' housing.

Third Research Phase: Data collection

Data will be collected using primary and secondary data collection methods.

a. Primary data

Conducting questionnaire survey

In employing the statistical approaches, data collection was conducted through distribution of questionnaire survey. A total of 1000 questionnaires were distributed to both public university students as well as private university students registered under the Ministry of

Higher Education database in the State of Selangor. This is a more feasible population size in order to obtain a more accurate sample size. However, only 735 questionnaires were returned and used for further analysis. Full-time undergraduate students who live on and off-campus and residing in private rented units were selected, as they are not likely to be employed as full-time workers. This indiscriminate sampling will rule out biased findings, as the respondents will also answer open-ended perception-based questions. Areas that have both public and private HEIs were selected as target population and delimitation of this research. The list of districts and universities chosen in Selangor are as tabulated in Table 2.

Table 2   Selected areas and population of students

Area and Types of Universities (N=240,308)					
Area of Universities	Area 1 (Shah Alam)	Area 2 (Gombak)	Area 3 (Serdang)	Area 4 (Bangi)	Total of Samples
Total population for each area	168,257	27,051	25,000	20,000	n=1000
% of Population Proportion	70%	11%	10%	9%	

Prior to the questionnaire survey, a pilot study was conducted to gauge the effectiveness and validity of the questionnaire designed. The pilot study for this research was conducted among undergraduate students of Universiti Teknologi MARA, Shah Alam, Selangor. In line with the research milestone, the pilot study was carried out in December 2016 within three weeks' time. Random sampling technique was employed for the pilot study. 90 prepared structured questionnaires were distributed to undergraduate students of MARA University of Technology and the researchers managed to acquire 86 returned structured questionnaires out of the total number of questionnaires distributed. A total of 90 respondents was used as sample because selecting a small sample size is in accordance with recommendations from literature, which are up to 100 respondents, or between 10 to 30 (Diamantopoulos & Siguaw, 2000; Luck & Rubin, 1987). In analysing and evaluating the results of this pilot study, quantitative approaches were used. These approaches involved the analysis of data and information through the perception survey method. Quantitative data which was obtained through structural questions involving Likert-scale type question contained in structured questionnaire forms was analysed by using the Statistical Package for the Social Sciences (SPSS) software through Cronbach's Alpha (α) and Confirmatory Factor Analysis (CFA) to test on the reliability and validity respectively.

This pilot study result shows that all 46 variables in student housing preferences have good reliability and validity. The reliability and validity of all attributes of variables in student housing preferences model depicted a high level. A model is deemed fit when the KMO value is more than 0.6 and p value (significance) is less than 0.05. From KMO result value for every aspect are > 0.6, which indicates that the model is fit and p. value is significant with 0.000 values. In addition, Anti Image correlation indicates that all attributes are correlated with values more than 0.6. This concludes that all variables are significant and well represented in the model construct.

b. Secondary data

Secondary data involves the collection of statistical figures on population of students in case study areas using official university websites. Relevant literature is collected from journals, proceedings, books research and seminar paper, newspapers and any other source that are related to this research.

Fourth Research Phase: Analysis of Data

Data collected from the questionnaire survey will be analysed using quantitative techniques in the form of descriptive statistics involving the frequency and percentage distribution methods. The data collected will be formulated and designed in table form. Since the questionnaire forms will also feature perception-based open-ended questions, qualitative analysis methods will also be employed to arrive at the findings.

Fifth Research Phase: Research Finding

In the last stage, the results of the quantitative and qualitative analyses will be synthesized to conclude the findings of the empirical research on the study areas.

In demonstrating the off-campus student housing preferences framework, an analysis using PLS software was used. In PLS, a structural model can be evaluated using coefficient of determination (R2) and path coefficients. A bootstrapping procedure was performed for 1000 samples with the purpose of analysing the t-statistics (t-values) which measure the statistical significance of path coefficients. The analysis model results can conclude that all latent variables in housing preferences possessed adequate validity and reliability. There exists relationship between latent variables and the indicators (observed variables) for each latent variable.

RESULTS AND FINDINGS

The results from the analysis of variables for items categorized under aspect of location showed that distances to facilities and amenities, shops, restaurants and banks have the highest mean of 4.50. It represents 89.8% of respondents who concurred, followed by the item distance to public transportation such as bus station and railway station concurred by 87.4% of respondents with a mean of 4.41. Meanwhile, the items near the university or campus and within walking distance have 84.1% of respondents who concurred with 4.34 mean value (Table 3).

Table 3: Rating aspect of location

Aspect of Location	Ratings %					Mean	Higher Attribute
	1	2	3	4	5		
Near To University/Campus, Within Walking Distance	2.2	3.1	10.6	26.4	57.7	4.34	
Near To Public Transportation (Bus Station, Rail Station)	0.7	2.3	9.7	29.7	57.7	4.41	*Near To Facilities And Amenities*
Near To Facilities And Amenities, Shops, Restaurants, Banks	0.4	1.5	8.3	27.6	62.2	4.50	*, Shops, Restaurants, Banks*
Near To Main Accessibility Such As Highway, Expressway	2.0	7.8	24.8	33.7	31.7	3.85	
Near To City Center	1.0	5.0	21.8	38.2	34.0	3.99	
	Average Mean					4.22	

Further analysis was made of the frequency calculation for the 'Aspect of Housing Quality', whereby respondents agreed that number of sockets was the higher attribute as tabulated in Table 4. Analysis of the frequency calculation for the 'Aspect of Housing Accommodation', which resulted in housing with kitchen facilities, is the higher attribute (Table 5). Finally, under 'Aspect of Housing Environment', results revealed safety and security factor as the higher attribute as in Table 5.

Table 4: Rating aspect of housing quality

Aspect of Housing Quality		Rating (%)					Mean	Higher Attribute
		1	2	3	4	5		
External Quality	The exterior wall and paints	0.1	1.9	21.0	46.1	30.9	4.06	
Internal Quality	All appliances, fixtures and wall	0.1	0.8	11.0	42.7	45.4	4.33	Number of Sockets
Wiring and Electrical Quality	An electric system, including lighting, wiring, and equipment.	0.1	0.8	6.1	30.5	62.4	4.54	
Number of Sockets	Sufficient electrical sources as to use essential electrical appliances.	0.1	1.4	7.8	32.7	58.1	4.47	
Housing Security	Secured and lockable windows and door completed with grill and operable dead bolt locks.	0.5	1.8	7.2	27.5	63.0	4.51	
Housing Space	The size and functionality of the house suit the	0.5	0.5	8.3	38.2	52.4	4.41	

		1	2	3	4	5	Mean
	number of renters at one time.						
Roof Quality	Effective waterproofing and weather protection.	0.5	0.8	10.2	35.0	53.5	4.40
Ventilation and air quality	Adequate air circulation, natural lighting and ventilation.	0.4	0.1	9.5	37.0	52.9	4.42
Sanitary Facilities	Adequate and in operation.	0.3	0.5	10.9	35.1	53.2	4.40
Water Supply Quality	Served by an approved water supply and free from contamination, leaks and threats to health and safety.	0.3	0.4	7.3	30.1	61.9	4.53
Average mean							4.41

Table 5: Rating aspect of accommodation

Aspect Of Housing Accommodation	Ratings %					Mean	Higher Attribute
	1	2	3	4	5		
Room with attached bathroom and hot water	2.3	4.9	24.1	33.6	35.1	3.94	
Room with air-conditioning	3.9	10.6	28.6	29.0	27.9	3.66	House with kitchen facilities
House with kitchen facilities	0.3	0.8	5.6	36.7	56.6	4.49	
House with laundry facilities	0.4	1.5	5.4	35.5	57.1	4.47	

	Ratings %					Mean	
Availability of internet access	0.8	1.6	8.3	27.5	61.8	4.48	
Availability of TV cable (Astro, Unifi, etc.)	3.8	5.9	22.2	29.1	39.0	3.94	
	Average Mean					4.16	

Table 6   Rating aspect of housing environment

Aspect Of Housing Environment	Ratings %					Mean	Higher Attribute
	1	2	3	4	5		
Neighborhood mainly family or adult workers	1.5	4.4	25.2	42.3	26.7	3.88	
Neighborhood mainly students	2.6	3.7	20.3	44.9	28.6	3.93	
Availability of parking spaces	0.8	1.1	11.7	31.0	55.4	4.39	
Availability of facilities and amenities nearby (banks, health institutes, post office, police station, etc)	0.4	1.0	5.7	30.6	62.3	4.53	Safety and security
Safety and security	0.4	1.0	5.0	22.6	71.0	4.63	
Not crowded	1.4	2.2	15.2	28.0	53.2	4.30	
	Average Mean					4.27	

Overall findings are explained by the mean score, where all four aspects have also been ranked according to the average mean score. The higher attribute ranked the most important aspect with a total mean score of 4.40 is the aspect of housing quality. This is followed by the aspect of housing quality, aspect of location and aspect of accommodation as displayed in Table 7.

Table 7: Average mean score for each variable

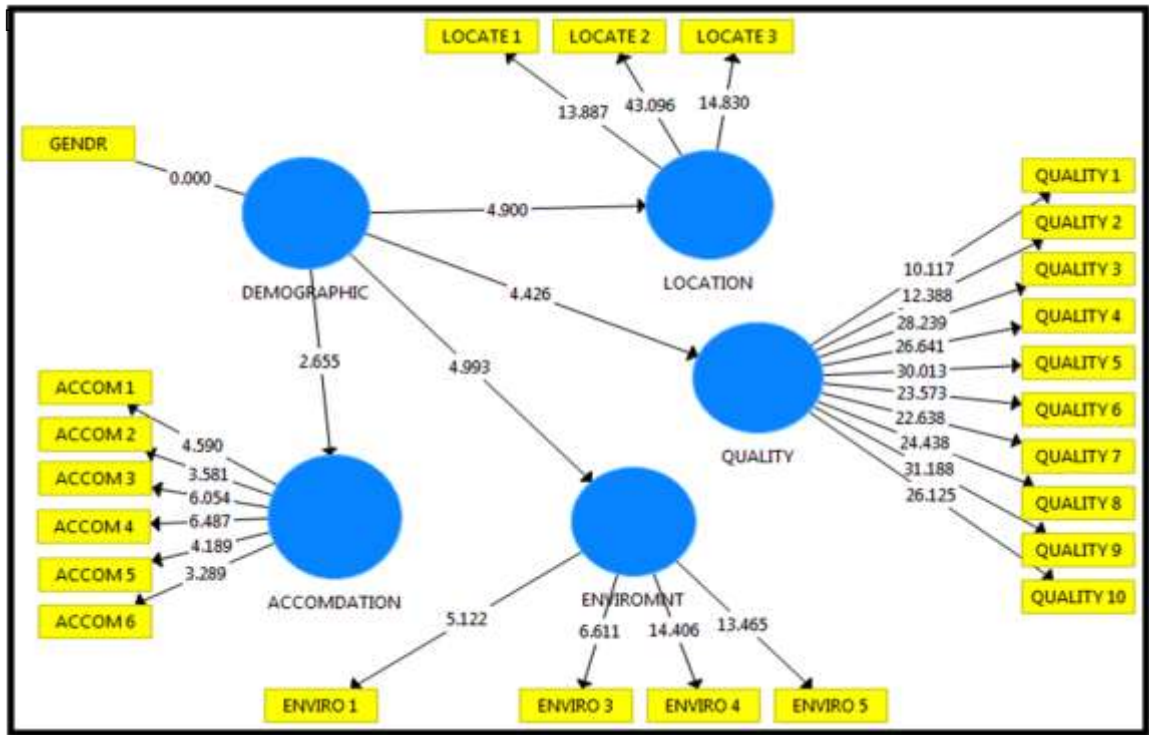| No.	Variable	Average Mean	Rank
1.	Aspect of Location	4.22	3
2.	Aspect of Housing Quality	4.40	1
3.	Aspect of Accommodation	4.16	4
4.	Aspect of Housing Environment	4.28	2

Figure **Error! No text of specified style in document.**2.0: Structural model of Student Housing Preferences

Table 8 Structural model results

Path	Description	R^2	Path Coefficient (β)	t-value	Relationship
DEMOGRAPHIC →ACCOMDATION	Relationships between student profiles (gender) and accommodation	0.014	0.120	2.655	Yes
DEMOGRAPHIC →ENVIROMNT	Relationships between student profiles (gender) and environment	0.027	0.164	4.993	Yes
DEMOGRAPHIC →LOCATION	Relationships between student profiles (gender) and location	0.029	0.170	4.900	Yes
DEMOGRAPHIC →QUALITY	Relationships between student profiles (gender) and housing quality	0.023	0.153	4.426	Yes

Figure 1.0 and Table 8 above show the variance explained R^2 in the dependent variables and the path coefficients (β) for the model. Consistent with Chin (1998), bootstrapping (1000 resamples) was applied to produce standard errors and t-statistics. This permits us to measure the statistical significance of the path coefficients. The R^2 for the values range from 0.014 to 0.029. The procedure indicates path

coefficients in the range of 0.120 to 0.170. Thus, these results indicate that there is a significant relationship between gender with housing preferences (aspect of housing quality, aspect of housing environment, aspect of location, and aspect of accommodation).

The analysis model results conclude that all latent variable in housing preferences possessed adequate validity and reliability. There exists relationship between latent variables and the indicators (observed variables) for each latent variable. This infers relationship between gender with three attributes in aspect of location, which is 1) near to university/campus, within walking distance attribute, 2) near to public transportation (bus station, rail station) attribute, and 3) near to facilities, amenities, shops, restaurants, banks. Interestingly, all attributes in aspect of housing quality and aspect of housing accommodation have relationships with each other.

On record, the relationship between gender and attributes of housing environment revealed only four attributes were accepted in the results measurement. Lastly, relationship between gender and attributes of housing environment to be recorded, only four attributes accepted in the measurement result.

Figure 3.0 shows the framework suggested for off-campus students housing preferences. The framework indicated that the four main factors to be considered relating to student housing preferences are location, housing quality, housing accommodation, and housing environment. Students prefer off-campus housing location, which is in the vicinity of public transport, near their university or campus, and near facilities and amenities. Among all the items, security, ventilation and air quality, and sanitary were the most preferred factors under housing quality factor. Due to the limitation of their income sources, students prefer housing accommodation with laundry and kitchen facilities rather than hot water, air-conditioning, internet access and TV.
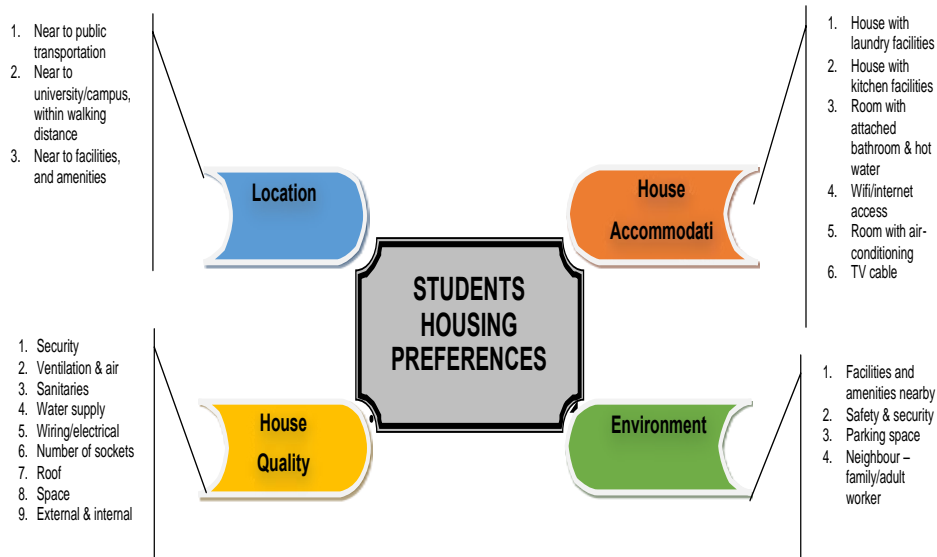
Figure 3.0 Framework for off-campus students housing preferences

CONCLUSION AND RECOMMENDATIONS

Based on the findings collated from the frequency, percentage and mean score analyses done on the data, the researchers have ranked all the housing attributes reflecting the students housing preferences. The aspect of housing quality ranked highest averaging a mean value of 4.40. Housing quality encompasses facilities provided by the proprietor of the rented house, such as the number of electrical sockets, internal and external painting, security, adequacy of sanitary facilities, etc. In the same token, aspect of accommodation ranked lowest at 4.16 average mean value. This is where the internal housing layout such as the number of rooms, the position of toilets, laundry facilities, etc is not of utmost importance to students. The aspect of housing environment including the neighbourhood profile, availability of parking facilities, etc was second in ranking. This shows that students do place importance in where they live. Students also prefer housing located near the campus and public transportation hubs; reflecting their concern on accessibility to school rather than the facilities provided inside the house itself. Hence, from this research, we conclude that most students prefer their housing to be within nearby facilities and amenities such as shops and banks. Students also prefer housing areas that have better security and safety. Parking space and their neighbourhoods are of less concern as not all students own or use their own cars during their years of study in the university. The researchers recommend that a more inclusive study be carried out to ascertain student housing preferences towards the formation of a national student housing preferences framework involving the relevant authorities and private developers.

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