International Journal of Engineering & Technology, 7 (4.28) (2018) 80-85

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET

Research paper



Develop The Concept Of Sustainable Residential College: Study A Room Space

Mohd Reduan Buyung[1]*, Haryati Shafii[2], Noor Ain Yusoff[3] & Nurul Rezuana Buyung[4]

[1,2&3]Faculty Of Business And Technology Management, Universiti Tun Hussein Onn Malaysia
[4]School of Housing, Building and Planning, Universiti Sains Malaysia
**Corresponding author E-mail: reduan_1986@yahoo.com*

Abstract

Developing the concept of a sustainable residential home concept requires room space study. Discomfort residents living in public college residences contribute to the implementation of this study. The result of adverse impact on the learning process of the population has continued to affect the sustainability of residential colleges. This problem eventually leads to the deterioration of the quality of life of its inhabitants. The purpose of this study is to identify the degree of comfort of accommodation space as the main hall in the public university residential college by using quantitative methods. The study took seven public university residential colleges from USM, UPM, UTHM, UITM, UTEM, UPSI and UKM (2874 respondents) into account. Software Statistical Package for the Social Sciences (SPSS) software has been used to analyze descriptive and inferential data The results of the study show that the comfort of the occupants in the room space facilities is at a comfortable level.. T test showed that female respondents have a higher level of comfort. For the T test, there is a weak positive relationship between the years of occupation and the year living in residential college with the comfort of the room facility. The level of comfort of a residential college is important as it is able to affect the overall quality of life of the occupants. The result of this assessment served as a basis to identify the level of comfort that was assessed by the occupants in regards to the condition of the room. Therefore, the information acquired from this study can contribute to the development of a sustainable residential college to make them more comfortable and conducive in the future.

Keywords: *Residential Colleges, Accommodation Rooms, Quality of Life and Comfort*

1. Introduction

Nowadays, the provision of housing facilities is a basic necessity of human life. A comfortable home is not only be a place to stay but it also highlights a good quality of life. The ideal home is considered fundamental to daily life [1]. Housing factors are important because they affect human well-being. In the context of student life at the university, the residential college is a living area that fulfills the basic need of students to pursue university life [2]. Comfortable and conducive residential college will facilitate the student's life. University provides facilities such as residential college for student accommodation [3]. Residential colleges refer to student residences when their residence is far from educational institutions and are very important for students [4]. Besides providing facilities for academic purposes, residential colleges also act as a booster for self-development. Better living circumstances are emphasized in the concept of life's quality [5]. This statement supports that comfortable residential colleges could have an impact on the life of a student. The initial accommodation is shown to include not only shelter but also cover the entire place of learning, accommodation and socializing spaces [6]. Research by [7] states that there are four main goals of developing residential colleges:

1. Useful experiences to catalyze academic success
2. Giving students the right to privacy, personal safety and personal property while in university
3. Creating an ideal environment to create a good self-esteem for personal necessity.
4. Producing a responsible generation, culturally and socially intellectual, highly -educated, internationally competitive, honorable and cultured nation and skilled at socialization.

Issues related to the discomfort of staying in a residential college are ones that have not been fully resolved today. Discomfort does not affect just the lives of the residents but can also interfere with the accompaniment of occupants while staying in a residential college. The issue of occupants' discomfort in the residential college has been proven through research on Universiti Sains Malaysia (USM) residential colleges by [8], who found that the issues were related to discomfort in the room of student accommodation provided by USM. Occupant discomfort while in college residence can have a direct negative impact on the deterioration of the residents' quality of life in the period of study. The total experience of collegiate life in the university for tertiary students tend to become fragmented into components represented by university-owned buildings, each fulfilling certain needs or functions [9]. If residents have uncomfortable experiences living in residential colleges, in the future the occupants would not stay in a residential college. This would encourage residents to bring their own vehicles to the university and this would have a negative impact on the environment. [10] had recognized issues and problems in the aspect of development of college students in the residence which are;

1. Physical space aspect: does not meet / comply with the Economic Planning Unit standards

Copyright © 2018 Authors. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

2. Physical aspect aspect: does not meet / comply with the Economic Planning Unit standards
3. Aspect basic amenities of the room: quantity and quality decline.
4. Support facilitation aspect: can not help students develop in academic and self-development.
5. The facilitation of students' disability facilities: does not meet / comply with the standards set by the international body
6. Aspect of administrative facilities: requirements according to standards

The effect of this discomfort would eventually disrupt the sustainability of life of the residents in residential colleges. In relation to sustainable development, there are three dimensions of sustainability: environmental dimension, economic dimension and social dimension [11]. The development of concept of sustainable focuses on few aspects which are economic, environment and social [12]. In the context of environmental dimension in residential colleges, the effect of lack of landscape preparation would lead to risks of natural disasters such as overwhelming heat, floods and landslides. Natural disasters like fires, landslides and flood are also causes of discomfort [13].

The impacts of poor residential colleges on economic dimensions are wastage of money, energy and time. Financial wastage through renovations and maintenance are high. Disregarding the design of buildings that meet the needs of occupants often creates problems especially in terms of renovation [14]. Renovations to fix problems caused by poor planning are not only a waste in terms of finance but also the time needed for renovation.

Problems in social dimension occur when the occupants feel discomfort, lack of tranquility, no reconciliation and reduction of motivation levels, thus giving unhealthy stress that would adversely affect the aspects of learning at residential colleges. Learning requires motivation [15]. The main factors that contribute to stress (pressure) of female students are noise, air and water pollution around the study area, making students unable to concentrate fully on learning [16]. Reviewed that students could not understand or process the information easily if they are physically uncomfortable with the environment [17]. Hence, there is a need to develop a Sustainable Residential College in Malaysia, which is based on the needs and comfort of occupants in order to improve the quality of life of students and to ensure a greener environment.

Overall, this study is aimed at identifying the comfort of residents in university accommodation provided. The results of the study can help develop a sustainable residential college designed to provide comfort to the occupants. The formula, the provision of accommodation is a basic necessity for the occupants to ensure they can continue living with a good quality of life while in the university. The provision of comfortable accommodation facilities will help the residents achieve excellence in academic and personal development thus further lead to improvement of the quality of life.

2. Literature Review

2.1. Quality of Life of the Students in the Residential College

Developing a sustainable residential college requires research on the quality of life. The quality of life received by residents while staying in a residential college is associated with the comfort they receive. Discomfort leads to deterioration of quality of life. Special team of the World Health Organization had studied the quality of life in 1993 and defined the quality of life as the individual's perception of their position in life from the point of culture norms in which they live and also associated goals, expectations, standardization and concerns about himself [5]. In the context of Malaysia, the quality of life is generally related to self-improvement, health, achievement, education and living standards over basic needs [18]. There were three main factors that contribute to the quality of student life in the college residence [19]. Apart from the convenience and safety factor, management factor is crucial in ensuring academic excellence and to ensure student satisfaction staying in the residential colleges. In the context of the residential colleges, the student's quality of life could be improved if the needs and comfort of living in the residential colleges was acquired. The role of the residential colleges is considered very important when providing convenience and welfare of the residents. The basic functions of the residential colleges are to provide services and accommodation facilities, maintain the quality and appropriate nutritional services and provide a space for conducive learning [20]. Eight aspects have been listed to determine the satisfaction of the students' quality of life while living in the residential college [21]. Namely:

1. Residential college environment
2. Facilities and services
3. Staff services and Student Committee members
4. Administration office
5. The whole life experience in a residential college
6. Supervision and safety
7. Programs and activities carried out
8. Cafeteria service

2.2. The Concept of Sustainable Residential College

The concept of sustainable development of residential college is a concept that is based on sustainable development. The underlying concept of Sustainable Residential College leads to the well-being of its occupants [11]. This concept is important because it leads to improved quality of life, environment and contribute to students' academic excellence. Development is defined as the subject of development and achieving advancements [22]. On the other hand, sustainable refers to a situation that unchangeable, remaining permanent and, therefore, the concept of sustainable development is development that maintains natural resources and ecosystems to mutually benefit future generations. The interpretation is made based on a research of the perspective on sustainability itself. However, generally sustainable development is defined by the Brundtland Commission in 1987 as development that meets present needs without compromising the ability of future generations to meet their own needs [23]. Although there are slight differences between the definition and understanding, both point to one direction which is to ensure a better human life in the present and in the future.

Sustainable development is a comprehensive development. It is not restricted only to the development or activities related to the environment. This principle is not only limited to the preservation of the environment and its resources, but also includes the management of human and financial resources as well as physical development [24]. Therefore, the appropriateness of the concept of sustainable development can be as a platform for developing sustainable residential colleges. Residential college concept that meets the needs of students should be developed with proper planning as well as the design space in accordance with the functions. Among the important components that should be taken into consideration in developing residential colleges are location, building, and access to the outside environment. The physical facilities provided in the hostel play an important role to the lives of students [14]. Sustainable residential colleges that will be developed should focus on more than the environmental aspects in order to that ensure students are able to continuously improve their quality of life during their stay in the university. This achievement can ensure quality of life for their academic excellence and become useful individuals to the society. Developing a sustainable residential college concept requires a study of the dimensions of sustainability and its impact in the context of the construction of a residential college. The following are related to three dimensions of sustainability:

Dimensions Environment: The environment is one of the aspects that affects the quality of human life. Any disruption to the environment ecosystem would create problems to humans. The increases of risks on natural disaster like global warming, landslides and floods were the effects of least of landscape construction in the environment dimension context in residential colleges. Discomfort is also caused by natural disasters [13].

Economic Dimensions: With respect to economic dimensions, sustainable development involves aspects such as finance, expenditure, natural resources, human resources, poverty eradication and so on. The impacts of poor residential college's concept on economic dimensions are a wastage of time, money and energy. Financial wastage is higher through renovations and maintenance. Disregarding the design of the building according to the needs of the occupants often causes problem, especially in terms of renovations [14]. Renovations to fix problems caused by poor planning are not only a waste in terms of finance but also the time needed for renovation.

Social Dimensions: Social dimensions are related to the harmony of a community within a residential or placement area. Difficulties in social dimensions happen when the occupants feel discomfort, lack of tranquillity, no reconciliation and reduction of motivation levels, leads to unhealthy pressure that would adversely affect the aspects of learning at residential colleges. Learning requires motivation. Learning process requires a motivation [15]. The main factors that contribute to stress (pressure) among female students are air, noise and water pollution surrounding study area, making students unable to concentrate fully on learning [16].

3. Methodology.

3.1. Population and Survey Sample

Sampling is a taking of part of a population. It is a good method to reduce costs and describe the entire population. As it is known, the sample is the source for the data. Sample is a part of the population without regard to whether it can be representative of the population or otherwise [25]. Referring to Table 1 for this research the whole population are 13,760 was full-time students of public universities, which comprises seven residential colleges of public universities. The number of samples is proposed in the [26] The actual number of samples from the field was 2874 respondents. Universiti Teknikal Malaysia Melaka (UTeM) was the highest respondent in this study which was 676 respondents. Meanwhile, Universiti Pendidikan Sultan Idris (UPSI) has the lowest number of respondents ie 241 respondents. In this study, the number of samples taken each residential college of public university is not standardized according to public university residential college population respectively.

Table 1: Number of samples by University

University	Number of Residents	Sample	Sample Fields	Percentage (%)
Universiti Teknologi Mara (UITM)	3500	346	301	87
Universiti Putra Malaysia (UPM)	2260	331	386	116
Universiti Kebangsaan Malaysia (UKM)	1000	278	307	110
Universiti Pendidikan Sultan Idris (UPSI)	1000	278	241	87
Universiti Sains Malaysia (USM)	2000	322	329	102
Universiti Teknikal Malaysia Melaka (UTEM)	2000	322	676	210
Universiti Tun Hussein Onn Malaysia (UTHM)	2000	322	634	196
Total	13760	2199	2874	130

3.2. Research Instrument

A questionnaire was used to obtain demographic information (part A) and the comfort of occupants in the room space (part B).

Part A covers three items to get student demographics. The items in this section are closed type and the respondent needs to reply based on the available options. Part B is an item related to the comfort of the respondents based on the provision of facilities or facilities available in the accommodation room. This section contains 11 item questions that respondents need to answer. Five point Likert scales have been used which are very comfortable (SS), comfortable (S), moderately comfortable (SDS), uncomfortable (TS) and very uncomfortable (STS).

3.3. Inference Statistics Analysis

The purpose of the inferential statistics is to summarize the raw data by making the measurement of the relationship between the variables [27]. Inference statistics are used to describe the relationship between a variable with another variable [28]. This measurement can access phenomena that cannot be explained by descriptive statistics. In this study, the result of the normality test shows that data distribution is normal. Therefore, this study uses the T-Test and Correlation Test.

1. T test
   - Ho: There is a difference in comfort between male and female students in terms of comfort in the comfort of the room.
   - H1: There is no comfort difference between male and female students in terms of comfort of the room.
2. Correlation Test
   - Ho: There is a correlation between the years of respondent study and the duration of the residential college with the comfort of the living room, the bed set and the toilet
   - H1: There is no relationship between the years of respondent study and the duration of the residential college with the comfort of the living room, the bed set and the toilet

4. Results and Findings

4.1. Respondent Background

The number of respondents involved in this study was 2874 people. There are three items in the background of the respondents surveyed in this study, namely regarding gender, age and race. Table 2 shows that there are a large number of 1967 (68%) female respondents compared to only 907 (32%) male respondents. Respondents aged 20 to 22 years were the highest number in this study 1450 (50.4%) respondents. Malay race are largest percentage in this study, namely 83% (2388 respondents).

Table 2: Respondents Background

Item		Total (%)
Gender	Male	907 (32)
	Female	1967 (68)
Age	Less than 20	1128 (39.2)
	20-22	1450 (50.4)
	23-25	257 (9)
	26-28	29 (1)
	29 Atas	10 (0.3)
Race	Malay	2388 (83)
	Chinese	295 (10.2)
	Indian	82 (2.8)
	Others	109 (3.8)

4.2. Comfort of the Room in Residential College

Referring to Table 3 there are six items that are used as an indicator to assess the comfort of occupier room physical space in residential college. Item room environment comfort shows that residents are comfortable with the amount on the scale of 1569 the majority of respondents (54.6%). Room size item indicates the majority of residents choose comfortable scale as the highest level of comfort with a total of 1351 respondents (47%) and very uncomfortable scale is the scale chosen by respondents with the lowest number of 38 respondents (1.3%). Items living room had a comfortable majority on a scale with 1176 the number of respondents (40.9%), followed by medium scale uncomfortable with the number of 912 respondents (31.7%). Ventilation for the highest number of items on the scale of comfortable with the amount of 1 262 respondents (43.9%), followed by scale medium comfortable with 715 respondents (24.9%) and the lowest selection is scale very uncomfortable 78 respondents (2.7%). Lighting in the room is also seen to have a majority comfortable on the scale with 1271 the number of respondents (44.2%). The design shows the scale of the room occupant comfort is the highest number of 1327 respondents (46.2%) while the scale is very uncomfortable to be at the lowest selection with 54 respondents (1.9%).

Table 3: Parts Comfort against Occupant's Physical Room Space

Item	STS	%	TS	%	SDS	%	S	%	SS	%
Room Environment	33	1.1	88	3.1	489	17	1569	54.6	695	24.2
Room Size	38	1.3	130	4.5	632	22	1351	47	723	25.2
Living Room	71	2.5	224	7.8	912	31.7	1176	40.9	491	17.1
Ventilation	78	2.7	220	7.7	715	24.9	1262	43.9	599	20.8
Lighting	57	2	182	6.3	659	22.9	1271	44.2	705	24.5
Design	54	1.9	156	5.4	736	25.6	1327	46.2	601	20.9

Table 4 shows the items of comfort against the occupant's room interior equipment containing five items. Convenience items for bedding sets (pillows, mattresses, blankets) shows the scale comfortable as the majority of the total 1121 respondents (39%) and followed by medium comfortable with scale of 898 respondents (31.2%). Chairs facilities provided were comfortable is the highest on the scale by the number of respondents are 1365 (47.5%). Study table shows the highest number on the scale comfortable with the amount of 1368 respondents (47.6%). For the convenience of the closet that provided residential colleges showed the majority choose comfortable with the scale of 1291 respondents (44.9%) and lowest selection is on the scale which is not comfortable with 65 respondents (2.3%). Item shoe rack provided results the highest on the scale which is comfortable with the amount of 1158 respondents (40.3%).

Table 4: Parts Comfort against Occupant's Room Internal Equipment

Item	STS	%	TS	%	SDS	%	S	%	SS	%
Bedding Set Facilities	79	2.7	235	8.2	898	31.2	1121	39	541	18.8
Chairs	54	1.9	121	4.2	658	22.9	1365	47.5	676	23.5
Study Table	48	1.7	117	4.1	573	19.9	1368	47.6	768	26.7
Closet	65	2.3	172	6	615	21.4	1291	44.9	731	25.4
Shoe Rack	193	6.7	220	7.7	701	24.4	1158	40.3	602	20.9

4.3. Comfort in the Occupant Room Using Test T Test by Gender

Referring to table 5 shows the results of the T test for the comfort of the facilities in the university's residential college bedrooms according to the gender of the respondents. The T test results for the comfort of the room environment were significant ($t = -4.487$, $df = 2872$, $p < 0.05$). The results showed that there were significant differences between male respondents (mean = 3.88) and female respondents (mean = 4.02) towards the comfort of the bedroom environment. This shows that female respondents are more comfortable with the room environment than male respondents. T test results for room size comfort are significant ($t = -6.388$, $df = 2872$, $p < 0.05$). The findings concluded that there was a significant difference between male respondents (mean = 3.75) and female respondents (mean = 3.97) on the comfort of bedroom size.

The T test results on the comfort of the living room showed significant ($t = -3.107$, $df = 2872$, $p < 0.05$). The findings conclude that there is a significant difference between male respondents (mean = 3.54) and female respondents (mean = 3.66) to the comfort of bedroom size. Female respondents had higher comfort than men responded to the comfort of the living room. Indoor lighting shows a significant value ($t = -4.468$, $df = 2872$, $p < 0.05$). Thus, there was a significant difference between male respondents (min = 3.71) and female respondents (min = 3.88) which had higher comfort in room lighting.

T test results for room design comfort were significant ($t = -4.527$, $df = 2872$, $p < 0.05$). The findings concluded that there were significant differences between male respondents (min = 3.68) and female respondents (min = 3.84) on the comfort of bedroom design. Female respondents get higher comfort in room design compared to male respondents. The preparation of bed set facilities shows a significant value ($t = -4.164$, $df = 2872$, $p < 0.05$). This proved that there was a significant difference in the comfort of bed set facilities between male respondents (min = 3.52) and higher female respondents (mean = 3.68). Meanwhile for seat comfort in the living room, the t test results for seat comfort are significant ($t = -2.567$, $df = 2872$, $p < 0.05$). The findings concluded that there were significant differences between male respondents (min = 3.80) and female respondents (mean = 3.89)

Learning desk facilities have significant values ($t = -5.044$, $df = 2872$, $p < 0.05$). The findings revealed significant differences between male respondents (min = 3.81) and female respondents (min = 3.99) towards the comfort of the room chair. Female respondents had higher levels of comfort than male respondents. The T test results on cupboard comfort showed significantly ($t = -7.172$, $df = 2872$, $p < 0.05$). The results concluded that there was a significant difference between male respondents (min = 3.67) and female respondents (min = 3.94) on the comfort of bedroom closet.

While T test results on the comfort of toilet use between male and female respondents showed significant ($t = -2.372$, $df = 2872$, $p < 0.05$). The results showed that there was a significant but significant difference between male respondents (mean = 3.37) and female respondents (3.48) on the comfort of toilet residences of university college residences. The last facility tested with T test is the shoe rack comfort shows a significant value ($t = -7.545$, $df = 2872$, $p < 0.05$). There was a significant difference in the comfort of shoes rack space between male respondents (mean = 3.37) and female respondents (3.72) which had higher levels. Ho accepted that there is a difference between male and female students in terms of comfort in the room facilities. Hence, Ho is accepted there are difference in comfort between male and female students in terms of comfort in the comfort of the room

Table 5: Respondents Background

Item	L (N=907), Min	P (N=1967) Min	Nilai T	Sig
Room Environment	3.88	4.02	-4.487	.000
Room Size	3.75	3.97	-6.388	.000
Living Room	3.54	3.66	-3.107	.002
Ventilation	3.71	3.88	-4.468	.000

Lighting	3.68	3.84	-4.527	.000
Design	3.52	3.68	-4.164	.000
Bedding Set Facilities	3.80	3.89	-2.567	.010
Chairs	3.81	3.99	-5.044	.000
Study Table	3.67	3.94	-7.172	.000
Closet	3.37	3.48	-2.372	.018
Shoe Rack	3.37	3.72	-7.545	.000

4.4. The Relationship Between The Year Of Study And The Year Of Living In The Residential College On The Room Facility At The University's Residential College.

The correlation test was conducted to obtain information on the relationship between the year of study and the year of living in the residential college with the comfort of the room's facility. In this study, only the living room facilities, the beds and the toilets have significant value. Therefore, correlation of spearmen had been used to see the relationship between the items involved.

Referring to Table 6, there is a correlation between the year of occupation and the comfort of the living room, the beds and toilets with their coefficient value ($r = 0.084$, $p = 0.000$), ($r = 0.068$, $p = 0.064$, $p = 0.001$) at confidence level $p < 0.01$.) at confidence level $p < 0.01$.

Furthermore, for residential year items there was a correlation between the duration of residential college with the comfort of the living room, the beds and toilet facilities with their coefficient value ($r = 0.100$, $p = 0.000$), ($r = 0.053$, $p = 0.004$) and ($r = 0.090$, $p = 0.000$) at confidence level $p < 0.01$.

The results showed that there was a very weak positive relationship. In conclusion, when the years of study in the university and the years of residential college is increase thus the comfort level of the living room, the beds and toilet facilities will increase but at a slight rate. This situation shows that respondents have been able to adapt to the condition of the residential college. At the same time, the year of study at university and year living in residential colleges is not a major influence on the comfort of the occupants. Hence, Ho is accepted that there is a relationship between the years of respondents' study and the year of stay in the residential college with the comfort of the living room, the beds and toilet facilities.

Table 6: Spearman Correlation between Years of Study and Years of Living in Residential College with Living Room, Bed and Toilet of University Colleges

Item	Hall		Bed set		Toilet	
	r	p	r	p	r	p
Year of study	.084**	.000	.068**	.000	.064**	.001
Years Living in Residential College	.100**	.000	.053**	.004	.090**	.000

In overall, all 12 items of convenience in the comfort section of the in-room facilities have the highest number on the comfort scale. This decision indicated that residents of the university's modern college have a sense of comfort in the provision of in-room facilities. The results of this study were also strengthened by [29] who revealed that students perceived service quality in Malaysian student housing as slightly high on the scale of good quality. Although statistics show an uncomfortable level of only about 10%, if left unattended and no action for improvement is taken today, this problem will become more serious and will seriously affect the quality of life of the occupants.

In this study, research on the comfort level of respondents by gender was done to determine whether there is any difference in terms of comfort level in the provision of in-room facilities. Encountered the result that male students cared more about privacy in their study bedrooms by operating the shutters less to ensure personal territory and used the rooms as a place for them to sleep and relax, while females like to make friends and entertain people in their rooms [30]. As a result of the T test, it can be concluded that there is a difference in comfort between the genders. The result of this test also showed that female occupants have higher levels of comfort than the space that men occupy. Gender differences should be considered in developing a sustainable residential college to meet the biological needs of different genders. Although the provision of the room is the same, the comfort level also depends on the influence of gender. This is due to the obvious anatomical difference between men and women [31]. Previous studies have shown that gender factors affect students during their stay at a residential college. That one of the main factors of the difference in comfort levels is the socio-physical backgrounds [32]. Socio-physical backgrounds are the demographic characteristics of an individual such as gender, economic status, ethnicity and others. The results of the study is in line with the study by [33], who found that female students are most likely to live in shared facilities.

The student bedroom is the main residential area of the residential college. The housing has an important influence on the wellbeing of the people [2]. The student life context in a residential college, the facility of a resident room should have the necessary facilities for students. Good facilities such as comfortable study tables and seats are important to ensure that the students able to do learning activities such as revision or to do assignment comfortably during their staying in the residential college. Students unable to give fully attention on the teaching and learning sessions if they are not comfortable with the seats, tables and equipment provided [34]. These are supported by [35], who stated that chairs and tables are not only important for work purposes but in the process of learning, they are also a key element. This statement shows that room facilities have an influence on the learning process of the occupants. The furniture provision such as the seats could leads to the discomfort of the occupants. Even though sitting on the seat is considered as not doing heavy works but it is also could give effects on human body [36-37]. It is also could leads to the long-term effects like varicose veins, back pain, neck stiffness, numbness and headache. The student rooms in the residential college is considered as multifunctional room. As addition in providing facilities for learning purposes, the guest rooms also provide the convenience for relaxing or sleeping. Uncomfortable bedding, mattresses and pillows would interrupt the rest or sleep of the occupants and may affect the health and motivation of the occupants [38]. Sleep is indispensable for every human being to make sure the body gets enough rest [39]. If the occupants do not have enough rest and sleep, it would disrupt the day-to-day activities of the residents in the course of their learning. Prolonged sleep disorders would result in biological changes, decreased body resistance to sickness, reduced work performance, irritability, stress, lack of focus and fatigue, all of which would ultimately affect the safety of oneself or others [40]. Therefore, the provision of comfortable and conducive room space is required to ensure that resident activities are in good working order

5. Conclusion

Residential college nowadays is a student placement center that is capable of providing various facilities and services to support the various activities of the occupants. Dormitory room is a multifunctional room that provides facilities for relaxing, sleeping, reviewing, performing assignments and socializing. Therefore, the comfort factor of the occupants is very important in the development of residential areas such as residential colleges. In this study, the convenience of the occupants of the in-room facilities is at a comfortable level. However, the continuous improvement aspect is needed to avoid the deteriorating comfort of the occupants will further deteriorate the quality of life.

This study is important to identify the issues and concerns related to the discomforts of residential colleges as they can be used to to address the issues and problems that arise in the future. Overall, the provision of accommodation facilities at the Malaysian public university residences is at a satisfactory level and are comfortable as observed from the study. However, in order to develop a sustainable residential college, it is necessary to improve the provision of rooms especially bed-and-learning-related equipment. The

comfort of staying in a residential college is an important aspect to be considered. Without the comfort of facilities provided, the occupants would be adversely affected. The comfort of staying in accommodation room of residential college is able to provide motivation and inspiration to occupants to achieve excellence. Comfort is important so that daily activities such as learning and resting by occupants are not disturbed, thus increasing the quality of life during their stay in residential colleges

References

[1] Van der Klis, M., & Karsten, L. "Commuting partners, dual residences and the meaning of home". Journal of Environmental Psychology, Vol.29, No.2, (2009), pp.235–245. available online https://doi.org/10.1016/j.jenvp.2008.11.002 last visit:26.02.2015

[2] Oladapo, A. A. "A study of tenants' maintenance awareness, responsibility and satisfaction in institutional housing in Nigeria". International Journal of Strategic Property Management, Vol.10, No.4, 217–231, (2006). available online https://doi.org/10.1080/1648715X.2006.9637554 last visit:26.02.2015

[3] Alwee, M. F., Darus, F. M. & Sarah, Z. "Selamatkah kolej kediaman untuk pelajar kita?". In. Seminar Tadbir Urus Kemudahan Kediaman Pelajar Se-Malaysia (2008). Pp.161-170. Hotel Putra Palace, Kangar, Perlis, anjuran Universiti Teknologi Mara.

[4] Mohd Suki, N., & Amin Chowdhury, I. "Students' Attitude and Satisfaction Living in Sustainable On-Campus Hostels". Malaysian Journal of Business and Economics, Vol.2, No.1, (2015), pp.35–47. 2015. Available online http://www.ums.edu.my/mjbe/images/mjbe/2015/vol2/3.pdf last visit:06.07.2016

[5] Mahir Razali, A.,Mohd Ali, K.A., Ab Hamid, M.R. & Mustafa, Z, Kesihatan Dan Kualiti Hidup Masyarakat, Universiti Malaysia Pahang. Pahang. (2014).

[6] Yaacob, M. A., & Yasak, Z. "Pengaruh Penginapan ke Atas Disiplin Pelajar Di Universiti Tun Hussein Onn Malaysia". In Persidangan Pembangunan Pelajar Peringkat Kebangsaan Universiti Teknologi Malaysia, (2008). Available online http://eprints.uthm.edu.my/96/1/mohd_asmedi%2Czurina.pdf last visit:17.07.2018.

[7] Anuar, M., Muhamad Darus, F., & Syed Yahya, S. Y. "Memperkasakan Modal Insan : Peranan dan Cabaran Kolej Kediaman di Universiti Teknologi MARA, Shah Alam". In: National Student Development Conference (NASDEC) 2006, pp.1-7. 8-9 August 2006, Kuala Lumpur, Malaysia Available online http://eprints.utm.my/id/eprint/495/ last visit:17.07.2018.

[8] Mohd Sari, K.A. (2003). Kajian Keselesaan Terma Di Penginapan Pelajar Universiti Sains Malaysia. Unpublished Masters thesis. Universiti Sains Malaysia.

[9] Bland, J., & Schoenauer, N. University Housing in Canada. Montreal: McGill University Press. (1966).

[10] Ministry of Higher Education. Garis Panduan Pengurusan Dan Pembangunan Kemudahan Kolej Kediaman IPTA. Bahagian Perancangan Dan Penyelidikan. 2012.

[11] Shafii, H., Wee, T. S., & Md Yassin, A. "Kolej Kediaman Lestari [Kkl] Di Malaysia: Kajian Awalan Terhadap Kesesuaian Konsep". Prosiding Seminar Serantau Ke-2 Pengurusan Persekitaran Di Alam Melayu, (Johnson 1974), 447–459. 2013.

[12] Syed Zakaria, S.Z. Pengetahuan Terhadap Alam Sekitar Dalam Pendidikan Sains Sekolah Rendah Asas Pembangunan Lestari. Pembangunan Lestari Di Malaysia: Harapan Dan Kenyataan. Dewan bahasa dan pustaka. (2014).

[13] Abdul Rahman, H. Pembangunan dan Keterancaman Alam Sekitar. Manusia dan Kelestarian Persekitaran. Penerbit UMT. (2012), pp.11-22.

[14] Syed Fadzil, S.F. Garis Panduan Reka Bentuk Bangunan Asrama Di Universiti Sains Malaysia. Universiti Sains Malaysia. Pulau Pinang. (2004).

[15] Mok. S.S. Pedagogi Untuk Pengajaran Dan Pembelajaran. Penerbitan Multimedia Sdn.Bhd. Kuala Lumpur. (2011).

[16] Mustafa, M. Z., Suradin, A., Muhammad, S. S., Madar, A. R., & Razzaq, A. R. Kajian stres dalam kalangan pelajar wanita program sarjana muda kejuruteraan d Universiti Tun Hussein Onn Malaysia (UTHM). International Conference on Teaching and Learning in Higher Education. (2009). Available online http://eprints.uthm.edu.my/322/1/mohamad_zaid_mustafa.ICTLHE.pdf last visit:15.07.2018.

[17] Knirk, F. G. Designing Productive Learning Environments. Educational Technology Publications, United States of America. (1979).

[18] Economic Planning Unit. Kualiti hidup Malaysia. Jabatan Perdana Menteri. Putrajaya. (1999).Economic Planning Unit (1999), Kualiti hidup Malaysia. Jabatan Per-dana Menteri. Putrajaya

[19] Mat, N., & Boon, Y. Tahap kepuasan pelajar terhadap pengurusan asrama di Kolej 9, Universiti Teknologi Malaysia, Skudai, Johor. (2010). Edupress 2010. Available online http://eprints.utm.my/14953/ last visit:19.07.2018.

[20] Mohd Tahir, L., & Mohd Nawi, S. Penilaian Terhadap Peranan Pihak Pengurusan Kolej Kediaman Dalam Mempertingkatkan Pembangunan Pembelajaran Pelajar : Tinjauan Di Lima Buah Kolej Kediaman Di Universiti Teknologi Malaysia. UNSPECIFIED . (2011), pp. 1-10. (Unpublished) Available online http://eprints.utm.my/id/eprint/12045/ last visit:19.07.2018.

[21] Said, H., & Ahmad, N. S. Kepuasan Mahasiswa Terhadap Kualiti Kehidupan Di Kolej Tun Fatimah, Universiti Teknologi Malaysia, Skudai, Johor. (2010), pp. 1-8. (Unpublished) Available online http://eprints.utm.my/id/eprint/10289/ last visit:19.07.2018.

[22] Hambug.,M. Kesedaran Pembangunan Lestari Diperingkat Kanak-Kanak. Universiti Teknologi Malaysia. (2008).

[23] Wheeler, S.M. Planning For Sustainability. Routledge. New York. (2004).

[24] Khalid, N. Perancangan aktiviti-aktiviti ekonomi maritim di Malaysia: Ke arah penerapan konsep pembangunan lestari. Jati, Vol.14, (2009). pp.77–88. Available online http://www.myjurnal.my/public/article-view.php?id=318 last visit:19.07.2018.

[25] Mohd Noor, N., & Mohamad, H. Persepsi Majkan Terhadap Faktor Yang Mempengaruhi Pemilihan Pekerja OKU (Fizikal) di Industri Sederhana (Kejuruteraan Mekanial) Daerah Johor Bharu, (2010). pp.1–6. Available online http://eprints.utm.my/id/eprint/10868/ last visit:19.07.2018.

[26] Krejcie, R. V, & Morgan, D. W. Determining sample size for research activities. Educational and Psychological Measurement, Vol.38, No.1, (1970). Pp.607–610. Available online http://journals.sagepub.com/doi/abs/10.1177/001316447003000308?journalCode=epma last visit:19.07.2018.

[27] Abas, M.A, Good Governance In National Solid Waste Management Policy (NSWMP) Implementation: A Case Study In Kuala Lumpur. UTHM: Ph.D. Thesis. (2017).

[28] Chua YP .Kaedah dan Statistik Penyelidikan Kedah, Malaysia. Mc Graw Hill. (2006).

[29] Bashir, S., Sarki, I. H., & Samidi, J. Students' Perception on the Service Quality of Malaysian Universities' Hostel Accommodation. International Journal of Business and Social Science, Vol.3, No.15, (2012). 213–222. Available online www.ijbssnet.com last visit:11.07.2018.

[30] Meir, I. A., Krüger, E. L., Morhayim, L., Fundaminsky, S., & Oshry-Frenkel, L. Towards a comprehensive methodology for Post Occupancy Evaluation (POE): A hot dry climate case study. In 2nd PALENC Conference and 28th AIVC Conference on Building Low Energy Cooling and Advanced Ventilation Technologies in the 21st Century, 2 (2007). Pp.644–653.

[31] Haroun, O. R. (2001). Sebab wanita lebih pandai belajar. Available online http://ww1.utusan.com.my/utusan/info.asp?y=2001&dt=1003&pub=Utusan_Malaysia&sec=Rencana&pg=re_07.htm last visit:11.07.2018.

[32] Kaya, N., & Erkip, F. Satisfaction in a Dormitory Building: The Effects of Floor Height on the Perception of Room Size and Crowding. Environment and Behavior, Vol.33, No.1, (2001). pp.35–53. Available online https://doi.org/10.1177/00139160121972855 last visit:11.07.2018.

[33] Amole, D. Coping strategies for living in student residential facilities in Nigeria. Environment and Behavior, Vol.37, No.2, (2005). Pp.201–219. Available online https://doi.org/10.1177/0013916504267642 last visit:14.05.2018

[34] Mohamed Zakuan, S.R. Ergonomik dalam rekabentuk kerusi dan meja makmal lukisan kejuruteraan di Sekolah Menengah Teknik dari perspektif pelajar. Unpublished Bachelor's thesis. Universiti Teknologi Malaysia. (2003).

[35] Osman, N.A. Knowledge Level Of The Teachers Regarding The Surrounding Environmental Issues At One Of The School In Perak State. Unpublished Master of Education Project Paper. Faculty of Education, University of Malaya. .(2003).

[36] Nor Azmi, N.A. Kajian Menentukan Ukuran Dimensi Dan Keselesaan Kerusi Belajar Di Perpustakaan Sultanah Zanariah (PSZ) UTM Skudai. Bachelor's thesis (Unpublished). Universiti Teknologi Malaysia. (2006).

[37] Irum, S., Qureshi, M.I., Ashfaq, M., Sami, A., Bhatti, M.N., Umar, A. (2018). A Review of Green Supply Chain Management Practices in Asian Countries. International Journal of engineering and Technology, 7(2.29), 1094-1096

[38] Buyung, M. R., & Shafii, H. Kolej kediaman lestari: Keselesaan bilik penghuni kolej kediaman Tun Fatimah, Universiti Tun Hussein Onn Malaysia. Geografi, Vol.4, No.2,(2016), pp46-53

[39] Hidie, S. Kepentingan Mendapatkan Tidur Malam Yang Cukup. The Brunei Times. (2013).

[40] Japardi, I. Gangguan Tidur. Digitized by USU Digital Library, pp.1–11. (2002).

.