

University Students' Preference for On-Campus Hostel Attributes



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ABSTRACT: The university hostel is an essential accommodation provision for students throughout their time at university. In recent decades, there has been a shift toward the university hostel as a central location for student development and support. It is a place where students live, study, entertain and socialise with other students during their university life. Therefore, consideration of relevant students' needs should not be overlooked in providing a conducive university hostel environment. It becomes a critical agenda to gain insights into new generation students' points of view to ensure that the design of the university hostel remains relevant to them. Therefore, this research aims to explore university students' preference for on-campus hostel attributes. The main objectives are to identify Generation Z (Gen Z) students' preferred attributes of university hostels and examine the values that influence their preferences. This qualitative research is based on the Means-End Chain (MEC) research model. Fifty-two Gen Z students residing in on-campus hostels provided by University Technology Sarawak, Malaysia were interviewed using the laddering interview technique. The result of this approach reveals fifteen preferred hostel attributes driven by six students' values. The finding shed new light on the interrelationship between hostel attributes and students' values. It provides a valuable reference for architects and university hostel management in establishing a conducive hostel environment congruent with the student's needs.

KEYWORDS: Generation Z, Hostel Attributes, Means-End Chain, Student Values, University Hostel.

I. INTRODUCTION

The provision of student living accommodations is an essential feature shared by higher institutions. Universities often provide students with hostels as their primary residence on campus throughout their study time. Despite the significance of university hostels, these residences are mostly seen as transitional places for university students. Although students only stay in the hostel temporarily for a few years, the hostel environment has a lasting impact on their motivation and performance in university [1]. Therefore, a good hostel design is critical in developing a conducive learning environment for higher education [2]. Living in a hostel is not merely about finding a living shelter for a few years near their lecture halls; instead, it becomes an especially significant period in a student's life. It is a place that helps students achieve intellectual competence and enliven their character through the on-campus living experience before stepping into their working life. A hostel is where students experience a sense of belonging by enjoying the sensation of homeliness [3, 4].

On and off-campus university hostels have been the subject of numerous research in recent years [3, 5-15]. Such research has increased the understanding of different facets of a student's university life, including students' coping mechanisms and the effect of the hostel environment on their conduct. Since the demand for a conducive hostel environment in universities is increasing nowadays [15, 16], hostel facilities and services are deemed vital to meet the various needs of students [16, 17]. The provision of a conducive hostel environment is thus not solely dependent on the number of buildings constructed but rather on the fundamental principle of how the provided facilities and services can meet the specific student needs without compromising their daily conveniences [18]. However, a review of past research indicates that there are currently limited findings on student housing preference, particularly in developing nations [7]. In addition, understanding the ideal attributes of university hostels that fulfil students' needs remains extremely limited [7].

Students' level of contentment with their respective hostel is crucial since it will affect how they deal with their motivations and how well they accomplish in university [14]. A well-designed hostel provides students a better setting to grow their learning and social skills [19]. Furthermore, it also improves the overall hostel management image and attracts more students to reside in the hostel. Seemiller and Grace [20] postulate that educators must comprehend the new generational cohort's defining traits, views, and learning styles to attract, educate, and develop them effectively. It becomes a critical agenda to gain insights into new generation students' points of view to ensure that the design of the university hostel remains relevant to them. Therefore, this research aims to explore university students' preference for on-campus hostel attributes. The main objectives are to

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identify Generation Z (Gen Z) students' preferred attributes of university hostels and examine the values that influence their preferences.

II. LITERATURE REVIEW

Generation Z (Gen Z)

Gen Z born between the mid to late 1990s and the early 2010s is commonly dubbed the digital native [21, 22]. Gen Z shares distinct and unique characteristics similar to the other generational cohorts [23, 24]. They have grown up in the rapid development of the information technology era. For them, the internet and digital devices such as computers, tablets, smartphones, digital media, etc., are not uncommon in their daily lives [25, 26]. As the first social generation, Gen Z students are the most digitally connected cohort relying heavily on social media and the Internet connection [22]. Compared to previous generations, Gen Z is more digitally savvy than their predecessors, even at a young age [27]. This generation cohort is comfortable with digital information. They can access the required information via the internet using various digital devices [22]. Information flow and exchange among them are rapid and instantaneous, primarily through social networks [25]. Therefore, Gen Z students have different or higher expectations of university hostels than prior generations.

Attributes of University Hostel

The attributes of the university hostel are qualities or features that are an inherent part of the hostel environment. The hostel environment can be perceived as either concrete attributes or abstract attributes [28]. Concrete attributes refer to tangible features of the hostel environment. It can be grouped into three categories, namely fixed, semi-fixed and non-fixed attributes. Fixed attributes are mostly building structures like a floor, wall, column, door, and window. Semi-fixed attributes comprise moveable items, including a table, chair, bed, and so forth. Spatial layout space structure and systems of settings are a few examples of non-fixed attributes [29]. Abstract attributes are the intangible quality of the hostel environment. For example, how students perceive the hostel's usage and meaning [30, 31]. A hostel with well-designed attributes can positively influence students' growth and development [32]. The level of student satisfaction correlates to the hostel environment's attributes [33]. Students will experience high satisfaction when the hostel environment fits their needs and expectations [15].

University students nowadays are looking for a hostel that can support their modern learning and living needs [3]. Unlike previous generations, they have higher expectations of their hostel environment [5]. They look forward to liveable environments that stimulate interaction with others while providing daily living convenience to them [6]. In other words, the hostel environment must adequately address university students' demands for different needs, such as social, learning, personal growth, to name a few. Students expect both private and communal attributes to be provided in their hostel. Students prefer privacy and comfort, demanding greater control of personal space. They tend to stay in a single room [7] and prefer an attached bathroom to a shared bathroom [8, 9].

Previous studies reveal various communal attributes required by students in a hostel environment. One of the communal attributes is facilities for students to be involved in different sports activities [7, 10]. They want entertainment spaces like a lounge [7, 10] and a television room [7, 10, 11]. Besides, students also require study areas [7-11] that facilitate personal study and group discussion. Nevertheless, students can prepare food with the existence of a pantry or kitchen [7-10]. Students also emphasise the availability of internet connections like WiFi [12] and air-conditioning [11]. Other essential facilities include cafeterias [7, 10, 13], laundry [11], prayer room [14], automated teller machines, mini markets parking lots, and bookstores [13]. Incorporating the abovementioned attributes into the hostel environment leads to greater satisfaction among university students [11, 13, 15]. However, not all of these hostel attributes are being considered in the design of university hotel due to the divergence between the perceptions between architects and students in university hostels.

The Gap Between Architect and Hostel Users

Although architect can design hostel using various ideas and techniques, the disparity between the architect and hostel users remain unchanged [34]. This has been a long-time concern from building users that there are contradictory views between building design and what the users genuinely desire [35]. This is commonly known as discontinuity between the architect and the building end user as depicted in Figure 1 [36, 37]. Both architects and end users experience and perceive building design in very different manners. Most of this arises from the fact that the end users of buildings are rarely involved in the design process. Architects always design the building based on input from paying clients and according to statutory requirements. Architects place more emphasis on architectural elements like space layout, circulation, lighting, ventilation, etc., while neglecting the end user's needs. As highlighted by Lim and Aminuddin [3], most of the university master plans are not too concerned with the liveability of hostels. The master plan for the university tends to overlook the essential role of the hostels in fulfilling students' overall satisfaction with the university [38].

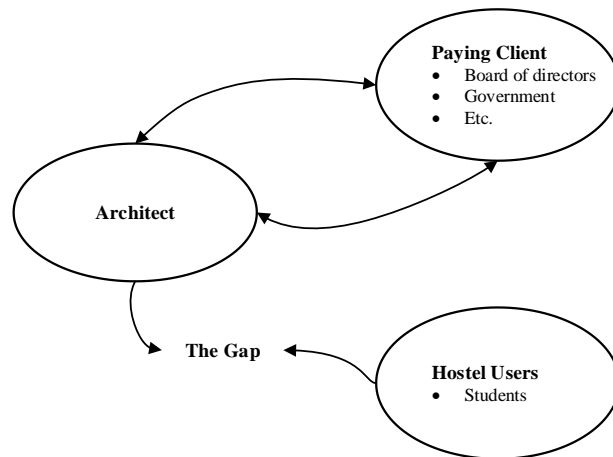


Figure 1. The gap between architects and building users

Bridging the Gap Between Architect and Hostel Users Using Means-End Chains (MEC)

Means-End Chain (MEC) theory has existed for some time due to the efforts of economist Abbott and psychologist Tolman [39]. Gutman utilised the MEC model to provide insight between consumers and products [39]. MEC model analyses the consumers' interaction with products by considering the meaning consumers derive from products [28, 39, 40]. Therefore, the MEC model can portray a clear picture of how certain products aids in fulfilling particular consumers' goals. This model was initially meant for marketing research to understand consumer behaviour [40]. Its effectiveness in eliciting user perceptions of products resulted in the instrument's popularity in several fields beyond marketing [41, 42]. Over time, the MEC theory and model have been effectively adapted to investigate end-user preference in the built environment [43-47].

In the case of a university hostel, MEC can reflect the students' preference for a hostel environment by eliciting various attributes that accommodate their needs and expectations. Most importantly, preferred hostel attributes in MEC model are motivated by students' values. Therefore, MEC is the meaning structure approach for determining the user's values while choosing specific hostel attributes [48]. The hostel attributes are the 'Means.' The 'Means' or attributes accommodate intended beneficial consequences driven by values referred to as the 'End.'

The MEC model identifies correlations between hostel attributes, consequences, and student values. As shown in Figure 2, MEC is thus the sequential link of meaningful pathways, from hostel attributes to consequences, and ends with student values [39]. Furthermore, the individual cognition system acts as a critical influencer in determining preferred choices in forming the MEC pathway [39]. In a nutshell, MEC consists of four core principles [28, 39, 40]. First, students' preference for the hostel environment can be expressed in associative pathways. Second, hostel attributes, consequences, and student values are key elements of the pathways. Third, these three key elements can be connected in a hierarchy structure. Fourth, students' preference is driven by their knowledge structure about the hostel environment.

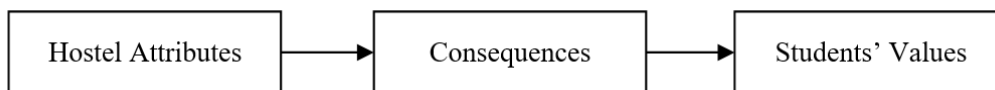


Figure 2. Means-End Chain Research Model in the Context of University Hostel

Schwartz's basic human value system works well with the MEC model in built environment research [43, 45]. Schwartz [49] posits that three universal requirements of human existence influence human values. These are the "needs of individuals as biological organisms, requisites of coordinated social interaction, and survival and welfare needs of groups." Responding to these requirements, Schwartz [49] formulated ten universal values that exist in all cultures as follows:

- i. Power - Social status and prestige, control or dominance over people and resources
- ii. Achievement - Personal success through demonstrating competence according to social standards.
- iii. Hedonism - Pleasure and sensuous gratification for oneself.
- iv. Stimulation - Excitement, novelty, and challenge in life.
- v. Self-direction - Independent thought and action-choosing, creating, exploring.
- vi. Universalism - Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.
- vii. Benevolence - Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.
- viii. Tradition - Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provides.
- ix. Conformity - Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.

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- x. Security - Safety, harmony, and stability of society, relationships, and self.

III. METHODOLOGY

This research employed a qualitative method design using a semi-structured laddering interview technique. The purposive sampling method was used. Fifty-two Gen Z students staying in hostels within campus provided by University Technology Sarawak, Malaysia were interviewed. Out of these respondents, twenty male and thirty-two female students had stayed in university hostels for at least one semester. These students were chosen due to their experiences as users of the university hostels. Therefore, they could provide better insight into the hostel environment from the users' point of view. The Interviews were conducted in students' respective hostels and ran for roughly thirty minutes per student.

Students were asked to provide their preferred hostel attributes during the laddering interview. The interviewer wrote down all the attributes that were essential to them. Then, the interviewer deployed the approach of repeated inquiry based on the list of attributes mentioned by students. The interviewer repeatedly questioned the student about the significance of each attribute by asking "why the attribute is important" to them. Using the repetitive questions technique, the interviewer could extract the connection of each attribute with relevant consequences and values. All of the interviews were recorded on a voice recorder and digitally saved.

The recorded interviews were transcribed and subjected to content analysis. The transcriptions were analysed using a technique similar to Reynolds and Gutman [40] and Wong and Jusan [50]. All the attributes, consequences, and values were identified and coded accordingly. The raw ladders were then constructed to represent the relationship between different attributes, consequences, and values. The raw ladders provided the necessary data to develop the Summary of Implication Matric (SIM). The SIM showed the frequency of each attribute, consequence, and value linked to each other, either directly or indirectly. Based on the SIM, Hierarchical Value Map (HVM) was then constructed to represent the perceptual orientation of students' preferences in graphical form. The constructed HVM in this research utilised only direct links. Furthermore, the HVM used a cut-off of five to filter out unnecessary data. This cut-off approach was in line with the recommendation by Reynolds and Gutman [40] when having a sampling size of 50 to 60 respondents.

IV. FINDINGS AND DISCUSSION

As portrayed in Figure 3, The HVM of the university hostel is a graphical perceptual orientation of serial chains from left to right. Fifteen preferred hostel attributes connect to eight beneficial consequences and are driven by six motivational values, as shown in Figure 3 and Table 1. The interpretations of students' preferences primarily rely on the relevant connecting chains of attributes, consequences, and values. The strength of each attribute, consequence, and value is determined by the direct number of links originating from each perceptual orientation chain. Based on the partitioning technique, every attribute link to a specific value within a chain. Therefore, the summary of intra-chain relationships can be grouped according to different values, as depicted in Table 2.

Table 1. Attribute, Consequence, and Value of University Hostel

Attributes	Consequences	Values
1. Laundry	1. Convenience	1. Hedonism
2. Recreation facilities	2. Relaxation	2. Benevolence
3. Study facilities	3. Close relationship	3. Conformity
4. Lift	4. Money saving	4. Self-direction
5. WIFI	5. Time saving	5. Achievement
6. Cafeteria	6. Comfort	6. Security
7. Convenient store	7. Efficiency	
8. Lounge	8. Good Outcomes	
9. Water dispenser		
10. Refrigerator		
11. Kitchen		
12. Furnished room		
13. Air-Conditioning		
14. Attached bathroom		
15. High security		

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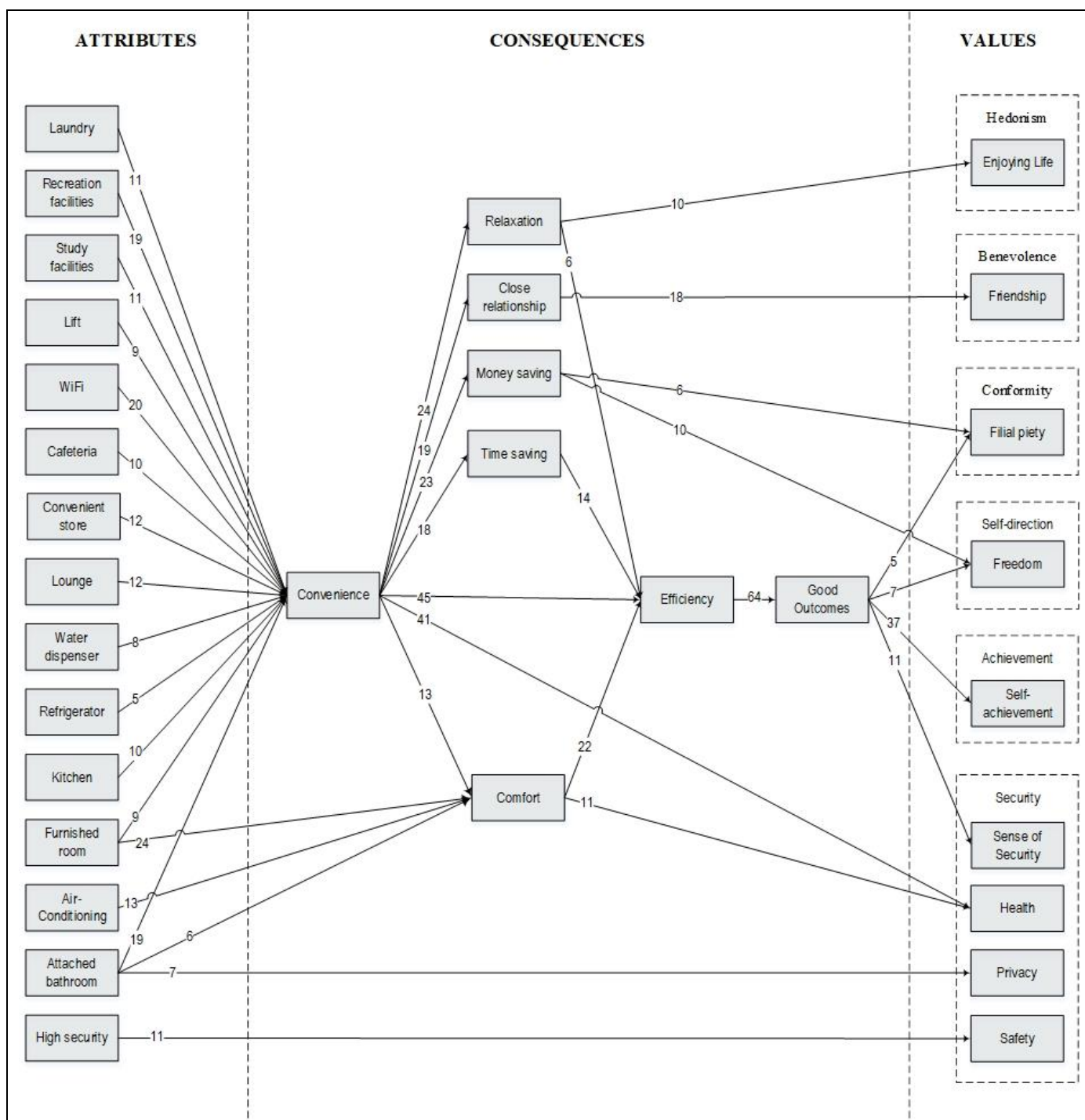


Figure 3. The Hierarchical Value Map of the University Hostel

Motivational Values of Hostel Attributes

Table 2 depicts the values ranking of students' preferences for university hostel attributes. Six personal values influence students when picking their favourite hostel attributes. A university hostel that seeks to support its students in meeting their needs must be in sync with these six values. Security is the highest among these motivational values, with 3821 links by a significant margin. Security value relates to the sense of security about their future, personal health, privacy and safety issues while residing in the university hostel far from home.

The second most important value is self-direction (3489 links) and followed closely by achievement value (3480 links). Self-direction demonstrates students' desire for the freedom to select, create, and explore things of interest. The value of accomplishment is intimately related to a student's potential for success in both current and future endeavours.

Conformity occupies the fourth place with a difference of eighty and seventy-one links from self-direction and achievement values, respectively. Conformity reflects students' consciousness of making up for the hardships endured by their parents. As a result, their acts of filial piety are carried out in order to show appreciation for the care provided by their parents.

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Table 2. The Motivational Values on Students' Preferences for University Hostel Attributes

No.	Attributes	Values					
		Security	Self-direction	Achievement	Conformity	Benevolence	Hedonism
1.	Laundry	280	257	254	251	56	45
2.	Recreation Facilities	288	265	262	259	64	53
3.	Study Facilities	280	257	254	251	56	45
4.	Lift	278	255	252	249	54	43
5.	WiFi	289	266	263	260	65	54
6.	Cafeteria	279	256	253	250	55	44
7.	Convenient Store	281	258	255	252	57	46
8.	Lounge	281	258	255	252	57	46
9.	Water Dispenser	277	254	251	248	53	42
10.	Refrigerator	274	251	248	245	50	39
11.	Kitchen	279	256	253	250	55	44
12.	Furnished Room	302	279	276	273	46	43
13.	Air Conditioning	121	106	136	104	0	0
14.	Attached Bathroom	301	271	268	265	56	53
15.	High Security	11	0	0	0	0	0
Total Value Link/Score		3821	3489	3480	3409	724	597
Value Ranking		1	2	3	4	5	6

The fifth-ranked value is benevolence, while the hedonism value takes the sixth position. Benevolence for students is the preservation and enhancement of relationships with friends, whereas hedonism concentrates on personal enjoyment. The six abovementioned values drive the fifteen attributes discussed in the following subsections.

Furnished Room

Students describe a furnished room as a room with furniture, particularly a bed and wardrobe. They prefer furnished rooms because they do not have to worry about sourcing furniture. They just need to bring their luggage, move into the room, and prepare for their studies. According to Figure 3, convenience and comfort are the foremost consideration regarding the furnished room. Students want a comfortable home where they can unwind after a long study day at university. They wish for a convenient setting to study and carry out daily tasks efficiently and effectively. A student said, "I wish to have a good place to sleep so I will look fresh the next day. If not, I can't focus in class, and I can't get a good result. Obtaining a good result can fulfil my ego and as a reward for myself." In addition, a student also stated that "It is very convenient for me if there is a comfy bed. So I can rest well and relax at the same time. Thus, I can take better care of myself and stay healthy." Therefore, three prominent values of self-achievement, a sense of security, and health influence their preference for furnished rooms.

Attached Bathroom

Similar to previous research [8, 9], students prefer the attached bathroom for its comfort, convenience, and privacy need. Most students view a communal toilet or bathroom as unclean and unsettling. As the student mentioned, "Public restrooms are quite dirty. I feel disgusted while I'm there." They are looking for an attached bathroom where they can maintain its cleanliness regularly. The student also stated, "I regularly use the bathroom to clean myself. Therefore, I find it much more convenient to have an attached bathroom." Besides, some students, especially female students, want an attached bathroom to regulate their privacy. They find it unpleasant to place communal bathrooms on the lower levels. They feel insecure by saying, "Others may be able to observe from the upper floors through windows."

WiFi

Students find it convenient to have high-speed and stable WiFi in a hostel environment. For students, WiFi is essential for quick online information access to complete their assignments and projects. They said, "WiFi increases the efficiency of my homework completion. So that I can achieve greater outcomes and have a brighter future." Besides, WiFi connects students to the world of internment via the internet, thus their source of hedonism. According to the student, "I can use WiFi for my social media, Youtube. Entertainment makes me happy, have fun, no stress." Gen Z students perceive WiFi as vital in fulfilling their learning, online social, and entertainment needs. This finding is in line with a research conducted by Allison *et al.* [27]. Students highlight the importance of WiFi, "We cannot release our stress and are unable to control our emotions without internet access." WiFi has undoubtedly become an integrated element of their daily life, and they find it hard to live without it in a hostel environment.

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Recreation Facilities

Recreational facilities support various recreational activities such as sports, board games, music, and dance, to name a few. Students required recreational activities to boost their academic and social performance. Moreover, recreation facilities enable students to engage in sports activities to remain fit and enjoy university life. This finding supports research conducted by Khozaei *et al.* [7] and Mutiara *et al.* [10]. As mentioned by a student, "It enables me to exercise daily, so I can always be healthy and enjoy my life." Some said, "I need it to relieve my tension and rest to calm myself and maintain self-control. Consequently, I may be more mature." Students constantly look for recreational activities within the hostel environment to balance their study life. They find it convenient to access various recreation facilities whenever needed. Relevant recreational activities relax their mind and help them effectively achieve a better learning outcome. Therefore, recreation facilities are essential for students' growth since they directly impact academic and extracurricular performance. In addition, recreation facilities also satisfy students' fundamental hedonism, achievement, and security values, as depicted in Figure 3.

Air-Conditioning

Students see air-conditioning as an essential hostel attribute regulating their psychological and physical comfort. Since this research is conducted in a hot-humid tropical climate country, air-conditioning is necessary to ensure a comfortable temperature range within the hostel environment. A comfortable living environment enables students to concentrate and complete their work more effectively, allowing them to accomplish their goals. A student mentioned, "In an air-conditioned room, I will not sweat, and it makes me feel relaxed to perform my task." In addition, a student also mentioned, "Air-conditioning makes me feel comfortable. I can focus on my work and complete it nicely. So, I can have a good result and make my parents happy." Therefore, the air-conditioning environment boosts students' effectiveness in achieving their learning needs and securing their success for a brighter future.

Convenience Store

A convenience store within a hostel supplies necessary things at reasonable prices to students. Students can grab groceries, snacks, foods, drinks, toiletries, etc., which are needed daily. Their preference for a convenience store is driven by two primary factors: time and money saving through increased convenience. They can conveniently purchase whatever they need within the hostel environment without travelling elsewhere. Subsequently, they can save time for other meaningful learning tasks and activities. Furthermore, they can also save money, especially on unnecessary transportation fees. For students, freedom is the central value that governs their consideration of a convenience store. All in all, additional time and money saved provide greater flexibility for students to enjoy other stuff in their university life.

Lounge

People are by nature social animals. Human potential to build interpersonal cooperative alliances is one of the pillars of the community's long-term viability. The same situation occurs in the hostel community. Students need a lounge in the hostel as a public realm to socialise and participate in group activities similar to previous findings [7, 10]. The student mentioned, "It's an important gathering place with friends." The student recognises the importance of communication by saying, "Meeting different people frequently improve my communication skills. I feel more confident working with different types of people in my future workplace." Interestingly, a female student highlighted, "I can meet all my male and female friends. Since only female students can enter my room, thus, we can meet up and chit-chat. I need a place to talk to make me happy and not get bored." In short, the lounge is an ideal communal place for students to develop friendships and acquire the necessary social skills to ensure their future success.

Laundry

Laundry appears to be a significant hostel attribute replicating the earlier finding [11], as every student must launder their clothing. Students demand a laundry area provided with sufficient washing machines and dryers. These facilities are convenient for students because they can save time and money while meeting their fundamental laundry needs. This is because students are not required to travel to laundromats beyond the hostel area. Therefore, they do not need to spend extra money on commuting fees. As a result, Students would have more time to pursue their academic tasks and hobbies. As pointed out by a student, "As students, we lack time to wash our garments by hand. Therefore, laundry within our hostel allows us to manage our time better and complete chores without delay."

Study Facilities

Students require study facilities that can support their academic endeavours. Similar to previous research [7-11], the study facilities mentioned by students can be categorised into individual study and group study facilities. In students' opinion, the proper study facilities enhance their concentration on their studies, leading to tremendous academic success. The student clarified, "Study facility is convenient for me to do assignments and complete them as fast and as good as possible. So, I can get good results for a better future career." Besides, students also mentioned the need for group study facilities for group work and

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discussion. They are concerned about the efficiency of study facilities in facilitating individual or group study after class in different situations. Their thinking is closely related to the sense of security and self-achievement values.

High Security

Students residing in the university hostel want a high-security system to safeguard their safety. Some security measures like the guard house, security cameras, card access, electronic lock system, etc., create a secure hostel environment. A student mentioned, "High security can ensure my safety. I feel more secure and less worried." The other student stated, "I want my belongings to remain safe and protected. It must feel like home." To most students, the world is so perilous. They desire high security in the university hostel to maintain their inner calm and mental health. Therefore, a high level of protection is required for a safe hostel environment.

Cafeteria

Students claimed that "Cafeteria is necessary at the hostel." This finding is in line with the previous studies by Abramson [13], Khozaei, Hassan [7], and Mutiara, Harsritanto [10]. The cafeteria is a dining area where students can select various dishes from an open counter and take the food to tables to eat after making payment. Some cafeterias provide vending machines for different drinks and snacks also. In students' opinion, the cafeteria within the hostel is convenient for them to purchase food and drink quickly. Therefore, they can have more time for other activities. A student said, "Since the food is easily accessible, I can spend more time completing my assignment. If I can do my task efficiently and promptly, I will have more time to pursue my interests or relax." In addition, several students want cafeteria, so they will not have to eat instant noodles frequently for health reasons. A student stated, "It makes it easy for me to get my meals instead of eating instant noodles, especially when rushing for assignments. It's not healthy." Students' concern about self-achievement and health undoubtedly influences their preference for the cafeteria.

Kitchen

Students' consideration of the kitchen comprises a pantry, dry or wet kitchen cater for food preparation like previous research [7-10]. The kitchen provides an alternative option for them to prepare their own food if they choose not to dine at the cafeteria or restaurants. Students wish to have more choices and freedom in food selection. According to the student, "If I become tired of eating out, I can make my own meals." Some students believe the opportunity to prepare their own meals might help them save money. A student said, "If I can cook at the hostel, I can save money for my parent. I love them and don't want to burden them." The statement reveals the essential role of filial piety value in student action. Other than that, some students are concerned about health, "Self-cook food is healthier." This is because students who cook for themselves are in a better position to ensure that nutritious meals are prepared.

Lift

The lift is a crucial vehicle for the vertical circulation of any hostel with multiple stories. Students perceive the provision of lift as a means of time and effort saving. As a result, they can use extra time and energy to focus on their interests and attain their aspirations. The student said, "It is convenient. I can go to my room without using the staircase. So I can spend more energy and time on other important stuff. Time is important because I need to complete lots of work." Besides, today's hostels must prioritise disabled-friendly concepts or universal design principles while creating spaces. Therefore, accessibility is one of the most significant advantages of having a lift in the hostel. Installing lifts facilitates easy access to all floors, especially for persons with disabilities.

Water Dispenser

The water dispenser is one of the many hostel attributes mentioned by students. They prefer the water dispenser because it is convenient for them to obtain adequate drinking water. According to the student, "It's easy for me to get my drinking water. Therefore, I do not have to go elsewhere for it." A student also mentioned, "I will not drink less water that harms my health." Another student echoed, "It's convenient for me to obtain enough water to maintain my health." In this case, they are all concerned about the health issue.

Refrigerator

Students want the refrigerator to keep the food cold so that the food can stay fresh longer. They stated, "I can purchase and store various fresh food and vegetables." It is convenient for them for food storage. Without a refrigerator, this might not be possible. The primary value that drives their consideration is health consideration. A student said, "Fridge preserves the freshness of my food so I can eat healthily." Another student agreed, "Eating fresh food makes me healthy and happy."

V. CONCLUSION

The environment of university hostels has steadily evolved alongside the progression of modern society [51]. Students nowadays expect a better quality of living in a university hostel. The university hostel is more than a place to reside and sleep for students. Instead, it should be a place to bring more meaning to their life in terms of social, learning, personal growth, etc. This research demonstrates that the fifteen hostel attributes mentioned by Gen Z students are essential to fulfil their different needs. These

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attributes include a furnished room, attached bathroom, WiFi, recreation facilities, air-conditioning, convenience store, lounge, laundry, study facilities, high security, cafeteria, kitchen, lift, water dispenser, and refrigerator. The availability of these attributes makes students feel more convenient for them to carry out various activities. Moreover, it helps students save money and time while enjoying a relaxed, comfortable, and socially friendly environment. For students, such an environment increases their efficiency in accomplishing learning tasks, thus attaining their intended goals.

The finding of this research postulates that the appropriateness of hostel attributes must be in sync with the needs of students. Establishing a conducive hostel environment is rooted in understanding how student values motivate their choice of preferred attributes. Based on the Means-End Chain (MEC) model, Gen Z students' preference for fifteen hotel attributes in this research is driven by hedonism, benevolence, conformity, self-direction, achievement, and security values. Any hostel attributes striving to meet student needs must be in accordance with these six values. The finding of this research has shed new light on what and why specific hostel attributes matter to Gen Z students. Furthermore, the interrelationship between hostel attributes and students' values serves as a helpful reference in developing a more value-oriented hostel. In short, architects and university hostel management can make informed decisions to establish a conducive hostel environment that is congruent with the student's needs.

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REFERENCES

- 1) Kocaman, G.Y., F.S. Sezer, and T. Cetinkol, *User satisfaction of indoor environmental quality in student dormitories*. European Journal of Sustainable Development, 2017. 6(1): p. 11-11.
- 2) Johari, N., et al. *Evaluating off-campus student housing preferences: A pilot survey*. in *AIP Conference Proceedings*. 2017. AIP Publishing.
- 3) Lim, F.K. and A. Aminuddin, *Perception of Students Housing Complex in Malaysian Public University. Case Study: University of Malaya*. MAJ-Malaysia Architectural Journal, 2019. 1(1): p. 41-48.
- 4) Cleave, S.L., *Residence retention: Reasons students choose to return or not to return*. 1996. 30: p. 187-199.
- 5) La Roche, C.R., M.A. Flanigan, and P.K. Copeland Jr, *Student housing: Trends, preferences and needs*. Contemporary Issues in Education Research (CIER), 2010. 3(10): p. 45-50.
- 6) Krasić, S., et al., *Architectonic analysis of common space organization in contemporary student dormitories around the world*. 2018. 15(3): p. 507-526.
- 7) Khozaei, F., et al., *Examination of student housing preferences, their similarities and differences*. Facilities, 2014. 32(11/12): p. 709-722.
- 8) Koch, D., D. Wesse, and R. Stickney, *New trends in campus housing*. Facilities Manager Mag, 1999. 15: p. 39-42.
- 9) Olujimi, J. and M. Bello, *Effects of infrastructural facilities on the rental values of residential property*. Journal of social sciences, 2009. 5(4): p. 332-341.
- 10) Mutiara, L.A., B.I. Harsritanto, and M.I. Hasan, *Comparative Study of Student Apartment's Facilities: Louvin and Pacific Garden Apartment*. 2020.
- 11) Torres-Antonini, M. and N. Park, *Sustainable student campus housing in the US*. International Journal of Spatial Design and Research, 2009. 8(10): p. 29-38.
- 12) Schenke, J., *Purdue students prefer to go solo*. *College Plann. Manage.*, 11: 62-64. 2008.
- 13) Abramson, P., *Downsizing residence halls: space and costs*. Living on campus, 2009: p. 20-27.
- 14) Najib, N.U.M., N.A. Yusof, and Z. Osman, *Measuring Satisfaction with Student Housing Facilities*. Am. J. Engg. & Applied Sci, 2011. 4(1): p. 52-60.
- 15) Khozaei, F., A. Hassan, and Z. Khozaei, *Undergraduate students' satisfaction with hostel and sense of attachment to place: Case study of university sains Malaysia*. American Journal of Engineering and Applied Sciences, 2010. 3(3): p. 516-520.
- 16) Najib, N. and N. Yusof. *A review of student housing facilities in higher learning institution*. in *Proceeding of the 3rd International Conference on Built Environment in Developing Countries (ICBEDC 2009)*, Dec. 2009.
- 17) Hassanain, M.A., *On the performance evaluation of sustainable student housing facilities*. Journal of Facilities Management, 2008. 6(3): p. 212-225.
- 18) Khozaei, F., et al., *Sense of attachment to place and fulfilled preferences, the mediating role of housing satisfaction*. Property Management, 2012. 30(3): p. 292-310.
- 19) Miller, H., *Room and Board Redefined: Trends in Residence Halls*. 2015, Herman Miller, Inc.
- 20) Seemiller, C. and M.J.A.C. Grace, *Generation Z: Educating and engaging the next generation of students*. 2017. 22(3): p. 21-26.

University Students' Preference for On-Campus Hostel Attributes

- 21) Cilliers, E.J., *The challenge of teaching generation Z*. PEOPLE: International Journal of Social Sciences, 2017. 3(1): p. 188-198.
- 22) Geck, C., *The generation Z connection: Teaching information literacy to the newest net generation*. Toward a 21st-century school library media program, 2007. 235(2007): p. 807-828.
- 23) Carter, T., *Preparing Generation Z for the teaching profession*. Srate Journal, 2018. 27(1): p. 1-8.
- 24) Hampton, D.C. and Y. Keys, *Generation Z students: Will they change our nursing classrooms*. Journal of Nursing Education and Practice, 2017. 7(4): p. 111-115.
- 25) Dolot, A., *The characteristics of Generation Z*. e-mentor, 2018: p. 44-50.
- 26) Mohr, K.A. and E.S. Mohr, *Understanding Generation Z students to promote a contemporary learning environment*. 2017. 1(1): p. 9.
- 27) Allison, C.M., et al. *An Analysis of Student Internet Usage and its Impact on the Infrastructure of a School's Information Technology Services*. in *Student-Faculty Research Day, CSIS*. 2016. Pace University.
- 28) Olson, J.C. and T.J. Reynolds, *Understanding consumers' cognitive structures: implications for advertising strategy*. Advertising and consumer psychology, 1983. 1: p. 77-90.
- 29) Jusan, M.B.M., *Identification of User's Expectations in Mass Housing using Means-End Chain Research Model*. Journal Alam Bina, 2007. 9(4): p. 1-19.
- 30) Zinas, B.Z. and M.B.M. Jusan, *Housing Choice and Preference: Theory and Measurement*. Procedia-Social and Behavioral Sciences, 2012. 49: p. 282-292.
- 31) Zachariah, Z.B. and M.B.M. Jusan, *Means-End Chain Model Framework for Measuring Housing Environment Choice Behavior*. Journal of Civil Engineering and Architecture, 2011. 5(6): p. 535-547.
- 32) Chafjiri, R.P., *A Study on The Satisfaction Factors in Designing the Students House: A Case Study of Boys Dormitory Campus of The University of Guilan*. IIOAB Journal, 2016. 7: p. 105-115.
- 33) Kivanç, D., *Relationships between density, crowding, privacy and dormitory satisfaction: the case of Bilkent University dormitories*, in *Interior Architecture and Environmental Design*. 2016, Bilkent Universitesi (Turkey): Ankara.
- 34) Debek, M., *Architects and non-architects assess architecture*. 2013.
- 35) Gifford, R., *Environmental Psychology: Principles and Practice*. 5th ed. 2014: Optimal Books.
- 36) Sanoff, H., *Integrating Programming, Evaluation and Participation in Design (Routledge Revivals): A Theory Z Approach*. 2018, New York: Routledge.
- 37) Zeisel, J., *Inquiry by Design: Environment Behaviour Neuroscience In Architecture Interiors*. 2006, New York W.W. Norton.
- 38) Howley, P., M. Scott, and D. Redmond, *An examination of residential preferences for less sustainable housing: Exploring future mobility among Dublin central city residents*. Cities, 2009. 26(1): p. 1-8.
- 39) Gutman, J., *A Means-End Chain model based on Consumer Organization Processes*. Journal of Marketing, 1982. 46: p. 60-72.
- 40) Reynolds, T.J. and J. Gutman, *Laddering theory, method, analysis, and interpretation*. Journal of Advertising Research, 1998. 28(1): p. 11-31.
- 41) Veludo-de-Oliveira, T.M., A.A. Ikeda, and M.C. Campomar, *Discussing laddering application by the means-end chain theory*. The Qualitative Report, 2006. 11(4): p. 626-642.
- 42) Jiang, S., N. Scott, and P. Ding, *Using means-end chain theory to explore travel motivation: An examination of Chinese outbound tourists*. Journal of vacation marketing, 2015. 21(1): p. 87-100.
- 43) Coolen, H. and J. Hoekstra, *Values as determinants of preferences for housing attributes*. Journal of Housing and the Built Environment, 2001. 16(285-306).
- 44) Gluszak, M. and M. Zięba. *Using the Means-Ends Approach to Understand the Value of Sustainability on the Property Market*. in *Smart City 360°*. 2016. Springer.
- 45) Jusan, M.B.M., *Means end chain, person environment congruence and mass housing design*. Open House International, 2010. 35(3): p. 76-86.
- 46) Sohaimi, N.S., et al., *Young Professionals' Housing Affordability Through Housing Preferences In Kuala Lumpur And A Review On The Means-End Chain Model*. Planning Malaysia Journal, 2017. 15(1).
- 47) Wong, C.S., M.B.M. Jusan, and L.S. Wong, *The Relationship between Students' Personality Traits and Privacy Preferences in Architecture Studio*. Man In India, 2017. 97(20): p. 215-230.
- 48) Coolen, H.C.C.H., *The Meaning Structure Method*, in *The Measurement and Analysis of Housing Preference and Choice*, S.J.T. Jansen, H.C.C.H. Coolen, and R.W. Goetgeluk, Editors. 2014, Springer: Netherlands. p. 75-99.
- 49) Schwartz, S.H., *An overview of the Schwartz theory of basic values*. Online readings in Psychology and Culture, 2012. 2(1): p. 11.

University Students' Preference for On-Campus Hostel Attributes

- 50) Wong, C.S. and M.B.M. Jusan, *Application of Means-End Chain Research Model to Explore Attributes of Architecture Studio*. International Journal of Applied Engineering Research, 2017. 12(4): p. 498-508.
- 51) Krasić, S., et al., *Architectonic Analysis of Common Space Organization in Contemporary Student Dormitories Around the World*. Facta Universitatis, Series: Architecture and Civil Engineering, 2018. 15(3): p. 507-526.



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