A STUDY OF URBAN LIVEABILITY IN A CITY AND A SUBURBAN. CASE STUDY: KUALA LUMPUR AND PUNCAK ALAM, MALAYSIA.

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ABSTRACT

Urban always being the main catalyst of growth in most of the countries. However, due to the high concentration of population, urbans encounter various challenges, *i.e.* environmental degradation, social unhealthiness, low sense of security, unhealthy lifestyle and traffic congestion. These phenomenon affect the liveability of urban dwellers. Liveability is affected by physical environmental and social aspects. A liveability study had been carried out in Kuala Lumpur city (with Mandy Villa as the study area) and a suburban (Puncak Alam). This paper is prepared with the aim to analyse the liveability of the residents in these areas and the relationship with the physical and social aspects. With a questionnaire survey, the respondents with diverse social and demographic background were mostly felt that the study areas were liveable. Relationship analysis via correlation tests showed that some of the physical aspects and most of the social aspects were positively and significantly related to the liveability level. With the research findings, urban managers, planners, private company and public agencies can come out with better strategies to improve the urban liveability. Nevertheless, more studies should be carried out in future for different locality for a better understanding of the urban liveability and the determining factors.

Keywords: Liveability, Physical, Settlement, Social, Suburban.

1. INTRODUCTION

Urban liveability is a field in planning research with the focuses on the topic of liveability concerning development and urbanisation in developed and developing countries. Liveability research has become a significant input for planning and managing sustainable and liveable urban settlements. According to researchers (Giles-Corti, et al., 2014), the built environment was designed to minimise non-communicable diseases and health inequity. Furthermore, the urban planning and development should focus on creating more liveable, green, compact, mixed-use, pedestrian-friendly, less car-oriented and more socially inclusive urban settlements.

Urban is the main focal points of economic, finance, social, physical and political growth in every state that have been proved itself as the most attractive venues to accumulate and generate wealth, creativity and innovation. In contrast, due to the urbanisation, urban faces great challenges, including environmental degradation, social inequality, an increase of danger feeling, an increase of health risk, housing unaffordability, and traffic jam. For example, low-quality housing does not satisfy the people for fundamental needs (Chohan, et al., 2015). Housing quality and space liveability are important to define the success or failure of community development (Chohan, et al., 2015).

Along with the urban development, there is a new trend of urban development in Malaysia especially in the Klang Valley, *i.e.* the sub-urbanisation. Sub-urbanisation is more towards the development of low-density housing areas outside than the existing city boundary. With the sub-urbanisation, people working in the city are staying in suburban housing areas. It is due to the fact that housing price in the suburban is lower with larger plot of land and more greenery environment. Conversely, the people are required to travel in a long-distance with more time spent for working trips (Ling, et al., 2018). Arguably, the liveability of the suburban settlement might be lower than city settlement. For instance, the residents of Puncak Alam (a suburban settlement) were travel more than 45 minutes to the nearby main cities/towns, *i.e.* Shah Alam and Klang, and even more than an hour for the trip to Subang Jaya, Petaling Jaya and Kuala Lumpur cities for working purpose. The main roads between Puncak Alam and Shah Alam/Klang were normally suffering with traffic jam, especially during the morning and evening peaks. Based on the questionnaire survey, 69% of respondents agreed that Puncak Alam was suffering from traffic congestion (Ling, et al., 2018).

Due to the challenges faced by urban areas *i.e.* the city as well as suburban settlements, a study is necessary to be carried out to understand the liveability level of the city and suburban settlements. For this paper, Manda Villa at Kuala Lumpur city and Puncak Alam (suburban) had been chosen as the study areas.

2. LITERATURE REVIEW

Liveability is a combination of various factors that influence people's quality of life. It includes the built and natural environmental, economic, social, educational, cultural, entertainment, sports and recreational aspects (Partners for Livable Communities, 2018). Thus, liveability can be related to sustainability, quality of life, and place-making with extra focus on community and their spaces. Space or an area reflects the particular environmental features and socially created settings where society interact among each other and with the natural environment (Perkins, 2008). Quality of life can also be understand as a social wellbeing that includes all the aspects of human life, *i.e.* nutrition, housing, health, education, security, social stability and cohesion, sports and recreation, physical environment, transportation and mobility, arts and creativity, and economy sustainability (Ling, et al., 2018; Asmah, 2005; Boyer & Savageau, 1981). Meanwhile, Samruhaizad (2008), highlights various elements of quality of life, for example, health, social relationship, family life, climate and geography, quality of the environment that could be different according to age, sex and place of residence or the environment.

As refer to the Connecticut Commission on Women, Children and Seniors (2017), the components of liveability consisted of two (2) aspects, *i.e.* the physical environment and social environment (Figure 1). For the physical environmental aspect, there are four (4) elements which are transportation/mobility, housing, public space and building and planning and zoning. For the social-environmental aspects, it covers three (3) elements, *i.e.* community engagement, health services and social services.

For the element of transportation, the concern is on creating diverse, accessible and affordable transportation alternatives that benefit all users. Reduction of traffic jam intensity and its related emission is achievable through the reduction of private car movements and better connectivity between residents and spaces. It is good to reduce people's transportation expenses and release income for other budgets (Bridger and Luloff, 2001). As refer to US Government (2009) creating safe, reliable, and economical transportation mode is potential to reduce transportation expenses, minimise the usage of oil, improve environmental quality, minimise greenhouse gas emissions, and improve human health.

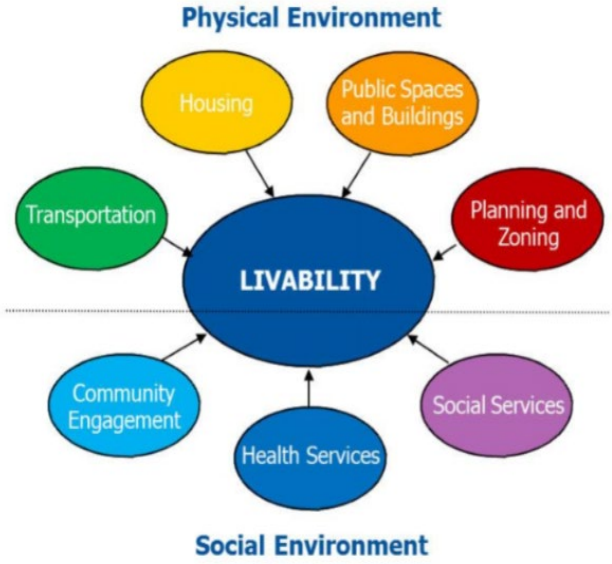

Figure 1. Liveability in relation to physical and social environmental aspects
Source: Connecticut Commission on Women, Children and Seniors (2017)

Besides, liveability is promoting the health and well-being of community which may include the elderly (Connecticut Commission on Women, Children and Seniors, 2017). At least 50% of all health conditions are associated with community wellbeing aspects, for example, walkable, quality and affordable housing areas, green transportation system, and safe community condition (Ibid, 2017).

In Australia, the urban liveability index was calculated as referring to a survey of Australian city residents (Department of Infrastructure & Transport, 2011) which consists of 17 parameters that associated to safety, accessibility/mobility, affordability, health, social, recreational accessibility, congeniality, environmental quality, urban design and amenity/facilities.

As refer to study in India (Rama, et al., 2014), eight (8) indicators were used in understanding the neighbourhood liveability. Those indicators consisted of safety/security, amenities and facilities, community space, infrastructure and public services, housing choices, natural environment and cleanliness, accessibility and diverse characteristic.

3. METHODOLOGY

This paper is discussing on the liveability level of urban areas *i.e.* a city and a suburban, and the relationship between physical and social aspects of liveability. Liveability level was identified based on the perception of residents in the study areas, *i.e*. Mandy Villa for Kuala Lumpur city; and Puncak Alam for suburban. The aspects of physical and social were identified based on the satisfaction and perception of residents in the chosen aspects (refer Table 1).

Table 1. Liveability aspects of physical and social for this paper

Physical aspects		Social aspects	
1.	Transportation system.	1.	Safety
2.	Access to public transport	2.	The sense of community
3.	Quality of facilities– the playground	3.	Community interaction
4.	Quality of facilities – gymnasium	4.	Volunteerism
5.	Quality of facilities – parking	5.	Happiness
6.	Environmental quality (the comfort of the living area)	6.	Healthiness
7.	Level of cleanliness		

3.1 Study areas

In general, Kuala Lumpur city is higher in density as compared to Puncak Alam. Nowadays, most of the new development in Kuala Lumpur is towards higher density with high rise building. For the purpose to carry out a pilot study, Mandy Villa was chosen as the case study for Kuala Lumpur city. Mandy Villa is a medium cost apartment located in the Sentul-Manjalara zone of Kuala Lumpur city. The apartment was built in 2005. The total area of the apartment is 6.65 acres. It consists of four (4) 12-stories block of buildings with a total of 288 residential units. It was equipped with basic public facilities, *i.e.* outdoor children playground, indoor gymnasium facilities and car parks. Refer to Figure 2 for the satellite image of Mandy Villa, Kuala Lumpur city.

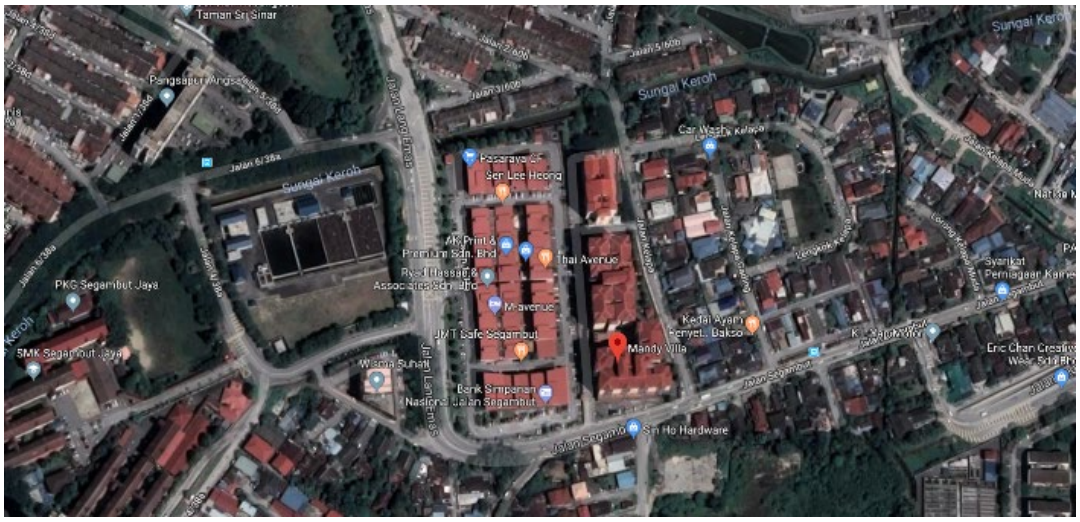

Figure 2**.** Satellite image of the study area in Kuala Lumpur city.
Source: Google (2017)

Puncak Alam is located around 20 kilometres in the northwest of Shah Alam city. Puncak Alam is one of the suburban developments in Selangor. Based on the observation, most of the areas in Puncak Alam are housing developments with small components for commercial and industrial developments. The satellite image (Figure 3) showed that Puncak Alam has located a distance away from the centralised development area in Kuala Lumpur conurbation, which includes Klang, Shah Alam, Petaling Jaya, Subang Jaya, Puchong, Kuala Lumpur, Putrajaya and Cyberjaya. Being a suburban area, Puncak Alam is surrounded by agricultural and rural activities (Ling, et al., 2018). However, it is going to be the main town in Kuala Selangor district, state of Selangor. Kuala Selangor district is one of the less developed districts in Selangor state. The development of Puncak Alam was started in the late 90s by a company called Bukit Cherakah Development Sdn. Bhd. The total area of Puncak Alam was around 57km2 (Ling, et al., 2018). However, since 15 May 2001, the development was charged to Puncak Alam Housing Sdn. Bhd. as the main developer with few other smaller developments.

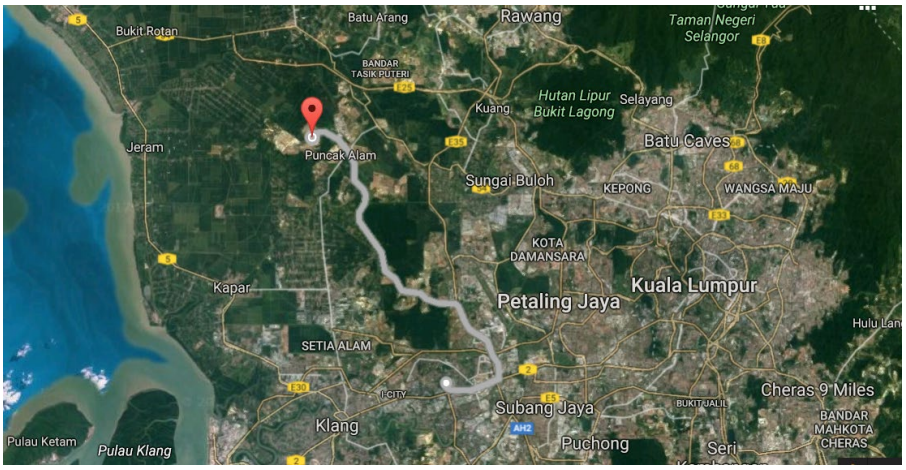

Figure 3. Location of Kuala Lumpur city and Puncak Alam in Klang Valley
Source: Google (2017)

3.2 Questionnaire survey

For the purpose of the liveability study, a questionnaire survey had been carried out to measure the liveability level and the satisfaction of residents for the physical and social aspects. A total of 95 respondents were selected randomly among the 288 apartment units in Mandy Villa (Kuala Lumpur city). Besides, a total of 100 respondents were chosen from Puncak Alam. For Mandy Villa, a convenient simple random sampling method was used. For Puncak Alam, a stratified random sampling method was chosen (Table 2). The samples covered respondents with various social-economic and demographic backgrounds. Most of the respondents were staying in the study areas around 6-10 years. Besides, most of them were working in the private sector. Table 3 shows the background of the respondents.

Table 2. Respondent distribution in Puncak Alam

Puncak Alam	Number of houses*	Population size*	% of respondents
Phase 1	1,250	5,560	13
Phase 2	2,530	10,120	22
Phase 3	4,820	14,520	32
Shah Alam 2	1,580	7,900	18
Alam Jaya	1,650	6,600	15
Total	11,830	45,000	100

*Source: Puncak Alam Residents Committee (2016)

Table 3. Background of respondents

Variables	Mandy Villa, KL (%)	Puncak Alam (%)
Gender		
Male	45.3	46.0
Female	54.7	54.0
Ethnicity		
Malay	28.4	66.0
Malaysian Chinese	45.3	21.0
Malaysian Indian	17.9	12.0
Others	8.4	1.0
Length of stay		
5 years or less	34.8	35.0
6-10 years	54.8	40.0
11-15 years	10.4	16.0
More than 15 years	0.0	9.0
Employment		
Public sector	30.5	35.0
Private sector	42.1	55.0
Self-employed	22.1	10.0
Retired	5.3	0.0

3.3 Method of analysis

The data from the questionnaire survey were analysed using the Frequency, Cross-tabulation, and Correlation tests via a statistical software known as Statistical Package for Social Science (SPSS). The analysis was aimed to identify the level of liveability and the relationship with the physical and social aspects.

4. RESULTS AND DISCUSSION

In this chapter, the respondents' satisfaction on the physical aspects was analysed and discussed. It is followed by the analysis and discussion for the satisfaction of social aspects. Lastly, the analysis was concentrated on

the overall liveability level of the study area and its relationship with the respondents' satisfaction on the physical and social aspects.

4.1 Physical aspects of liveability

Most of the respondents were dissatisfied with the transportation system both at Mandy Villa as well as Puncak Alam (Table 4). However, there were around 17% of respondents at Mandy Villa were satisfied with the transportation system at Kuala Lumpur, but none for the Puncak Alam. Furthermore, there were 38% of respondents at Puncak Alam felt very dissatisfied on the transportation system at Puncak Alam. It showed that the transportation system in Mandy Villa, Kuala Lumpur city was more satisfied by respondents as compared to the Puncak Alam. Being a suburban area, Puncak Alam was suffering from traffic congestion during the peak hours. Meanwhile, it is found that respondents at Puncak Alam travel in a long distance to the working places. Around 33% of respondents at Puncak Alam commute to/from work more than 20 km every day.

Table 4. Satisfaction on transportation system

Satisfaction	Mandy Villa(% of respondent)	Puncak Alam (% of respondent)
Very dissatisfied	0.0	**38.0**
Dissatisfied	**46.4**	**40.0**
Neutral	36.8	22.0
Satisfied	**16.8**	0.0
Very satisfied	0.0	0.0
Total	100.0	100.0

For the aspect of environmental quality (the comfort of the living area), most of the respondents in Mandy Villa were neutral (43%) or dissatisfied (one third) with the level (Table 5). However, most of the respondents at Puncak Alam were neutral on environmental quality (87%). The Mandy villa (Kuala Lumpur) is surrounded by commercial activities and located adjacent to a sewerage treatment plant. It might be the reason for the lower satisfaction level of the respondents in Mandy Villa on the environmental quality aspect. In contrast, Puncak Alam, a new housing area located far from densely city development is offering better environmental quality for comfortable living.

Table 5**.** Level of environmental quality (the comfort of the living area)

Satisfaction	Mandy Villa(% of respondent)	Puncak Alam (% of respondent)
Very dissatisfied	6.3	0.0
Dissatisfied	**35.8**	4.0
Neutral	**43.2**	**87.0**
Satisfied	14.7	9.0
Very satisfied	0.0	0.0
Total	100.0	100.0

For the facilities in the study areas, most of the respondents in Mandy Villa were satisfied with it (Table 6 and 7). Approximately 67% of the respondents were satisfied with the parking facilities (Table 6). The parking units were provided adequately and with sufficient lighting for the convenience and safety of people. Besides, almost half of the respondents were satisfied with the children playground as provided at Mandy Villa (Table 6). Besides, most of the respondents also satisfied with other recreational/sports facility, which is the gymnasium facility in Mandy Villa (Table 7). It showed that facilities for the medium-cost apartment at Kuala Lumpur city (Mandy Villa) were satisfied by most of the respondents.

Table 6**.** Quality of car parks and children playground, Mandy Villa

Satisfaction	Car parking (%)	Children playground (%)
Very dissatisfied	0.0	0.0
Dissatisfied	0.0	0.0
Neutral	8.4	45.2
Satisfied	**67.4**	**49.5**
Very satisfied	24.2	5.3
Total	100.0	100.0

Source: Ling, et al. (2019)

Table 7. Quality of gymnasium facility at Mandy Villa

Satisfaction	**%**
Very dissatisfied	0.0
Dissatisfied	0.0
Neutral	34.7
Satisfied	**58.9**
Very satisfied	6.4
Total	100.0

Source: Ling, et al. (2019)

However, the majority of respondents at Puncak Alam felt dissatisfied with the quality of public facilities in the area (Table 8). Being a new development area, not all the facilities had been provided in Puncak Alam. The quality of the existing playground and recreational areas were less satisfied by respondents. Meanwhile, there was lacking gymnasium facility in the area.

Table 8. Quality of public facilities at Puncak Alam

Satisfaction	**%**
Very dissatisfied	15.0
Dissatisfied	**34.0**
Neutral	30.0
Satisfied	21.0
Very satisfied	0.0
Total	100.0

In general, for the physical aspects, most of the respondents in Mandy Villa were satisfied with the facilities provided in the area. However, most of the respondents at Puncak Alam were dissatisfied with the public facilities provided in Puncak Alam. For the environmental quality, the condition was different. The environmental quality at Mandy Villa was less satisfied by most of the respondents as compared to the Puncak Alam. For the aspect of transportation, most of the respondents for both study areas were dissatisfied. It showed that environmental quality was better in the suburban area (Puncak Alam). However, the facilities were better in the city area (Mandy Villa, Kuala Lumpur). Both the city and suburban areas were facing less satisfied level for the transportation system.

4.2 Social aspect of liveability

Among the four aspects of social, there was only one aspect showing similar condition among both study areas, which was happiness (Table 9). Majority of respondents felt neutral or satisfied for the aspect of happiness.

That means most of the respondents were happy while living in their area. For the aspect of community interaction, Puncak Alam was better than Mandy Villa (Table 10). Most of the respondents were satisfied or neutral for this aspect in Puncak Alam. In contrast, most of the respondents were neutral and dissatisfied with the community interaction at Mandy Villa. Based on the survey, public facilities in Mandy Villa were more satisfied by respondents as compared to Puncak Alam (Table 6 - 8), however, community interaction was better at Puncak Alam. It might due to the suburban community was putting more effort to maintain good community interaction as compared to the city community. It is in line with the common assumption that city community was more individualist and weak in term of the community interaction.

Table 9. Happiness

Satisfaction	Mandy Villa (% of respondent)	Puncak Alam (% of respondent)
Very dissatisfied	0.0	4.0
Dissatisfied	2.1	17.0
Neutral	**54.7**	**37.0**
Satisfied	**41.1**	**41.0**
Very satisfied	2.1	1.0
Total	100.0	100.0

Table 10**.** Community interaction

Satisfaction	Mandy Villa (% of respondent)	Puncak Alam (% of respondent)
Very dissatisfied	0.0	0.0
Dissatisfied	**44.3**	5.0
Neutral	**36.8**	**48.0**
Satisfied	18.9	**47.0**
Very satisfied	0.0	0.0
Total	100.0	100.0

However, for the aspects of safety and healthiness, Mandy Villa was better than Puncak Alam. Most of the respondents at Mandy Villa felt “neutral” for the sense of safety (Table 11). However, most of the respondents at Puncak Alam felt dissatisfied for the sense of safety. It might due to the gated and guarded facilities at Mandy Villa were pushing up the sense of safety among respondents at Mandy Villa. In contrast, the study area at Puncak Alam was not fully gated.

For the aspect of healthiness, two-third of the respondents at Mandy Villa were satisfied with their healthiness level (Table 12). However, more than half of the respondents at Puncak Alam were not satisfied with the healthiness level (Table 12). This result can be associated with the higher satisfaction level for the public facilities (include recreational facility) at Mandy Villa as compared to Puncak Alam. Public facilities were expected to have a positive impact on improving the health level of an area.

Table 11. Sense of safety

Satisfaction	Mandy Villa(% of respondent)	Puncak Alam (% of respondent)
Very dissatisfied	0.0	28.0
Dissatisfied	29.5	**40.0**
Neutral	**45.2**	21.0
Satisfied	20.0	11.0
Very satisfied	5.3	0.0
Total	100.0	100.0

Table 12**.** Healthiness

Satisfaction	Mandy Villa(% of respondent)	Puncak Alam (% of respondent)
Very dissatisfied	0.0	0.0
Dissatisfied	1.1	13.0
Neutral	10.5	**53.0**
Satisfied	**66.3**	33.0
Very satisfied	22.1	1.0
Total	100.0	100.0

4.3 Correlation analysis for the liveability

For the correlation analysis, the data set for the Mandy Villa was used. Majority of the respondents (47%) felt that their area was either liveable or very liveable. Nevertheless, there were 19% of respondents felt unliveable (Table 13). Referring to correlation test (relationship analysis) between physical and social aspects, and liveability level, it was found that four (4) physical aspects and five (5) social aspects were significantly correlated to the overall liveability level (Table 14 and 15). All the significantly correlated aspects were positively correlated to the overall liveability level (refer to the r-value in Table 14 and Table 15). The findings showed that when the satisfaction of the social and physical aspects in Table 14 and Table 15 increased, the overall liveability level also increased.

However, among the social aspects and the physical aspects, more social aspects were significantly correlated (related) to the overall liveability level. Five (5) out of the six (6) social aspects were significantly correlated. Conversely, there were only four (4) out of the seven (7) physical aspects were significantly correlated to liveability. Furthermore, the study found that the correlation coefficient (r) values of the social aspects were generally larger than physical aspects. The correlation coefficient (r) values of the physical aspects were ranging from 0.246 to 0.347 only (Table 14). However, the correlation coefficient (r) values of social aspects were ranging from 0.236 to 0.708 (Table 15).

Table 13. Overall liveability level

Satisfaction	**% of respondent**
Very unliveable	0.0
Unliveable	19.0
Neutral	33.7
Liveable	**43.1**
Very liveable	4.2
Total	100.0

Table 14. Correlation between overall liveability and physical aspects

Physical aspects	***r***	***p***	**Sig. Level**
Access to public transport	0.347	0.001	0.01
Transportation system	0.399	0.000	0.01
Cleanliness	0.328	0.001	0.01
Environmental quality	0.246	0.016	0.05

Note: *r* = coefficient*; p* = significant value; Sig. = significant
Other physical aspects were not significant even at 0.05 level

Table 15. Correlation between overall liveability and social aspects

Social Aspects	*r*	*p*	Sig. Level
Volunteerism	0.708	0.000	0.01
Safety	0.527	0.000	0.01
Community interaction	0.519	0.000	0.01
Sense of community	0.436	0.000	0.01
Happiness	0.236	0.021	0.05

Note: *r* = coefficient*; p* = significant value; Sig. = significant
The aspect of healthiness was not significant even at 0.05 level

5. CONCLUSION

The satisfaction levels of the physical and social aspects of liveability were different between the city (Mandy Villa) and suburban (Puncak Alam) areas. For the physical aspects, the environmental quality was better in the suburban area (Puncak Alam). However, the facilities were better in the city area (Mandy Villa, Kuala Lumpur). Both the city and suburban areas were facing less satisfied level for the transportation system. For the social aspects, the majority of respondents in both areas felt neutral or satisfied with the aspect of happiness. That means most of the respondents were happy while living in their areas. For the aspects of safety and healthiness, Mandy Villa was better than Puncak Alam. However, community interaction was better at Puncak Alam as compared to Mandy Villa. It showed that suburban community was having a stronger community spirit as compared to the city community. More satisfied facilities at city area might contribute to the better healthiness, however not the community interaction.

In general, the study area was identified as "liveable" based on the perception of most of the respondents. There were four (4) physical aspects and five (5) social aspects positively and significantly correlated (related) to the overall liveability level. The relationship between social aspects and overall liveability was stronger as compared to the relationship between physical aspects and overall liveability level. It can be concluded that the liveability level among respondents was more affected by social aspects as compared to the physical aspects. As a result, more effort to increase the liveability in the study areas should concentrate on all the significantly correlated (related) aspects, especially the aspects of volunteerism, safety, community interaction, sense of community, and accessibility.

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