Perception Analysis Of Living Environment At Taman Melati Residential Areas

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Abstract

Rapid physical development in a residential area will deteriorate living environment of the residents especially if it takes place haphazardly without applying adequate planning guidelines. It will, eventually, exert more pressure on physical infrastructure of the area. As a result, residents of the area will be subjected to dissatisfaction on the present supporting infrastructure as the demand exceeds the supply. Evidently, it may lead to poor living conditions of the area, which ultimately slow the progressiveness of the society to achieve the quality of living standards. This paper investigates residents' perceptions on present living environmental setting at Taman Melati residential area in Kuala Lumpur. Questionnaire survey was administered to determine the perceptions of the residents on physical environmental parameters such as air, noise, streetlight illuminance, and traffic volume. The level of satisfaction of the residents on the living environment had showed nearly 64% of the respondents expressed "satisfied strongly" or "satisfied". The level of willingness of the residents to stay further continuously at Taman Melati indicates about 56% of the respondents expressed "strongly willing" or "willing". It is also seen that the overall satisfaction level of the residents on the living environment was high albeit satisfaction level on individual physical environmental parameters was low.

Keywords: *living environment, residential area, traffic noise, streetlight illuminance, air pollution*

Introduction

Rapid physical development in a residential area will deteriorate the tranquility and safety of the residents especially if it takes place haphazardly without applying adequate planning guidelines. It will, eventually, exert more pressure on physical infrastructure of the area. As a result, residents of the area may have dissatisfaction on the present supporting infrastructure as the demand exceeds the supply. Evidently, it may lead to poor living conditions of the area, which ultimately slow the progressiveness of the society to achieve the quality of living standards. Better living environment, free from noise, air and visual pollutions, at residential areas would improve healthy lifestyle which in turn makes complete and continued involvement of the workforce at the workplace for the benefits of the society and the nation (Abdul Azeez K.H.et.al., 2006). Many parameters are directly responsible for a better living environment in a residential area. Some parameters are visible and others are not. To exemplify, parameters such as noise and air pollution are not clearly visible but are subjected to wide detrimental effects on human lifestyle if they are not controlled adequately. Prolonged exposure to noise and air pollution may cause permanent physical damages to the people in particular and society in general. About 60% of residents were dissatisfied with noise level and 55% with air level, thus impacting the living

environment of residential areas (Khoo 2002, Sumiani et.al. 2002). Attention on living environment should be given to enhance city excellence (Ker, L.T, 1991).

A study to assess the living environment of residential areas involving few Japanese researchers was conducted at Taman Melati residential areas located at the outskirts of Kuala Lumpur. Physical environmental parameters such as noise level, air pollution, level, streetlight illuminance and traffic volume were measured in addition to administration of a questionnaire survey as part of the study. However, this paper highlights findings on residents' perceptions on living environment based on questionnaire survey only. This paper, thus, investigates the present conditions of living environment in a residential neighborhood at a district scale in Kuala Lumpur. It is believed that it would help to assess the present scenario on living environment of the selected residential area for the purpose of ascertaining whether or not it is within the acceptable or permissible level. Thus, it necessitates data on elements to evaluate living environment at the selected study area. The perceptions of the residents on some of the physical environmental parameters such as air, noise, streetlight illuminance, traffic volume were highlighted. Residents' perceptions on the present living environment of the selected neighborhood are an imperative indicator to gauge their standing on the living environment that they are subjected to. To ascertain the present conditions of the living environment from the residents, a detailed questionnaire on the perceptions toward living environment was prepared and a questionnaire survey was administered at the selected study area. The details of the questionnaire survey and its findings are elaborated in this paper.

Research Approach

Site Profile

Kuala Lumpur, the capital city of Malaysia and where the study area is located, has a land area of 243 sq.km. with a population of 1.42 million (Statistics 2000, Department of Statistics). The ethnic classification of Kuala Lumpur population (Statistics 2000, Department of Statistics) includes Malay (38%), Chinese (43%), Indians (10%) and others (9%). Kuala Lumpur is located between 30 m and 200 m above average mean sea level (Structure Plan of KL 2020). Taman Melati, the study area, is located at the northeast of Kuala Lumpur (Fig. 1, 2 & 3), about 10 km from the Kuala Lumpur City Centre. Taman Melati, an area of 0.75 sq.km., is a small residential neighborhood with a population of about 7700. It accommodates different types of residential areas (terrace houses, apartment houses, link houses, and semi-detached houses), a railway station, large open spaces and alignment of an arterial road (MRR2) (Photo 2) running very close to the study area. Taman Melati was selected as the study area for this research because it encompasses different types of residential areas (Photo 1) such as terrace houses, semi-detached houses, link houses and apartment type houses. The alignment of an arterial road running very close to the neighborhood and the location of a railway station which may cause detrimental effect to the living environment of the residents, if not controlled properly, were other reasons for selecting Taman Melati as the study area. Additionally, the study area is also located at very close proximity to the International Islamic University Malaysia (one of the researchers' workplace). It could be safely asserted that the environmental setting of Taman Melati in terms of the selected physical environmental parameters is more or less similar with other residential areas in Kuala Lumpur. The increase in traffic growth directly contributes to increase in noise and air pollution levels in the residential areas.

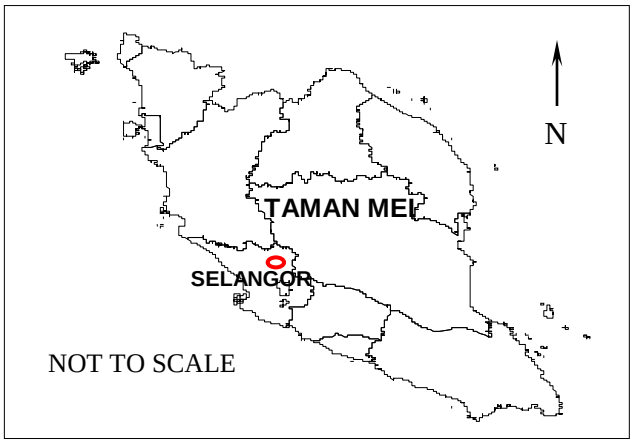


Figure 1. Key Plan of the Study Area

Figure 2 Location Plan of the Study Area

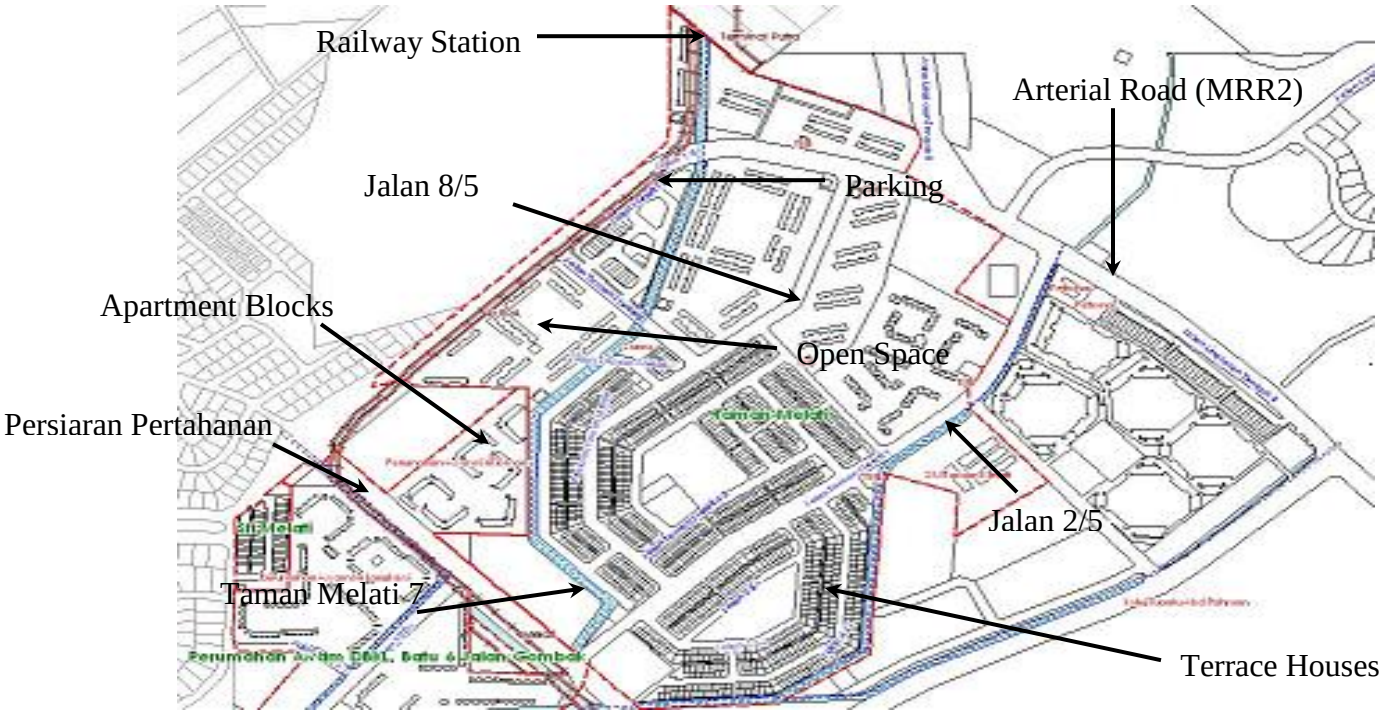


Figure 3 Site Plan of the Study Area (Taman Melati)

Questionnaire Survey

A questionnaire survey about the perceptions of the residents on living environment was administered at the selected households in the study area. The questions include awareness on noise, air pollution, traffic volume, streetlight illuminance toward safe, healthy and comfortable living conditions of the residents, resident's expectation on the physical environmental

parameters toward healthy living conditions and resident's level of interest on air and noise pollution, traffic volume and streetlight illuminance. About 400 samples were selected from the total population of 3222 households. The types of houses included were apartment houses and terrace houses. Questionnaires were distributed to 400 households of terrace and apartment units and it was administered by direct interview with the respondents and leaving questionnaires then collecting it from the respondents the following day. Nevertheless, only 265 samples were collected from the residents at a response rate of 66%.

Photo 1: Residential area in Taman Melati

Photo 2: MRR2 near Taman Melati

RESIDENTS' PERCEPTIONS TOWARD LIVING ENVIRONMENT

General profile of the respondents

Figure 4 shows percentage of collected and uncollected questionnaires from the respondents. The response rate was 66% in which the percentage of those who were interviewed was 90%. Among uncollected questionnaires, 9% of the residents were refused to respond, 18% were not available at the time of survey, and 7% were unoccupied houses. Figure 5 shows the administration of questionnaire by mode of "interviews" and "self-filling up" procedures. The percentage of questionnaires received by "interview" and "self-filling up procedures" modes was 73% and 27% respectively. Figure 6 shows the distribution of questionnaires according to the type of housing areas. Questionnaires were distributed to the residents living at terrace houses and two types of apartment houses (Block A-D, Block 32-42). The response rate from the terrace houses was slightly higher than apartment houses. Figure 7 shows distribution of respondents by gender. Female respondents (55%) were higher than male counterparts (42%). The highest number of respondents was in the age category of twenties (31%), and the average age of respondents was 33 years old. This trend is shown in figure 8. The distribution of respondents by races is shown in figure 9. The frequency of ethnic Malay respondents was higher (84%) than other races. Figure 10 shows the frequency distribution of the respondents' household size. The highest frequency (23%) was in the category of household size of 5 persons, and the average household size of the respondents was 5 persons. The average tenure of the respondents at the present dwellings was 8 years (Figure 11).

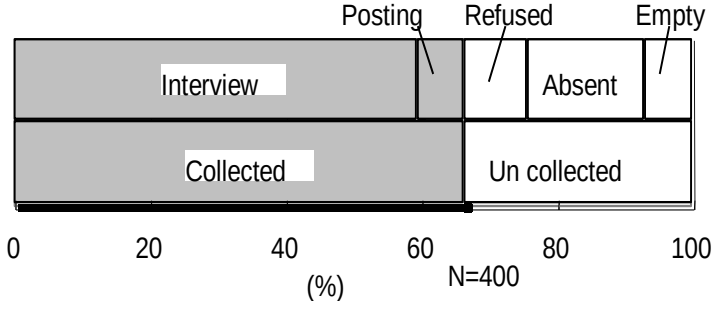


Figure 4 Percentage of collected and uncollected questionnaires

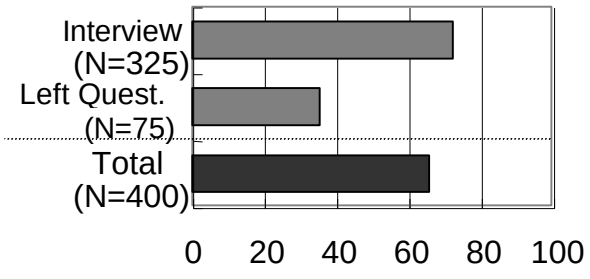


Figure 5 Mode of administration of questionnaire

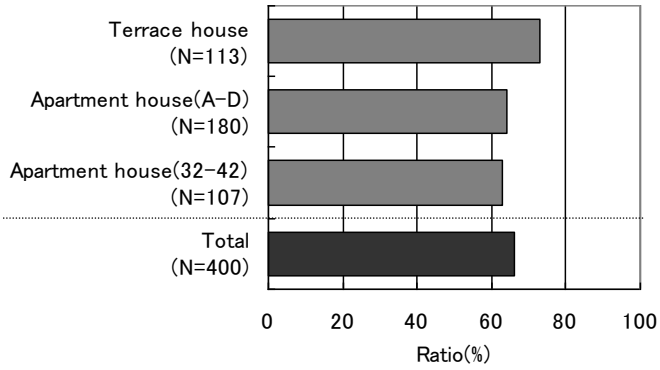


Figure 6 Distribution of questionnaire according to type of residences

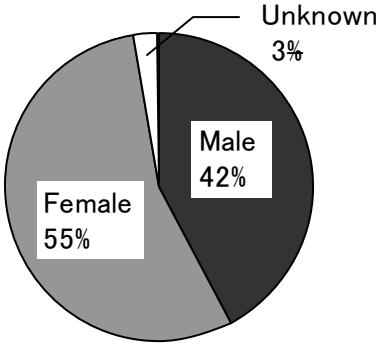


Figure 7 Frequency distribution of the respondents by gender (N = 265)

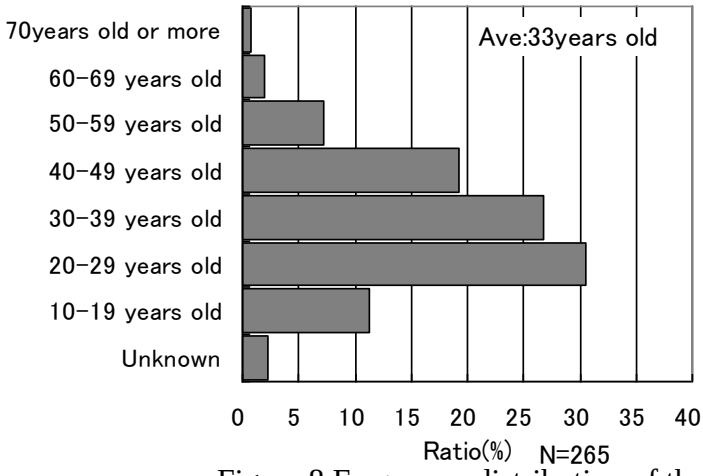


Figure 8 Frequency distribution of the respondents by age

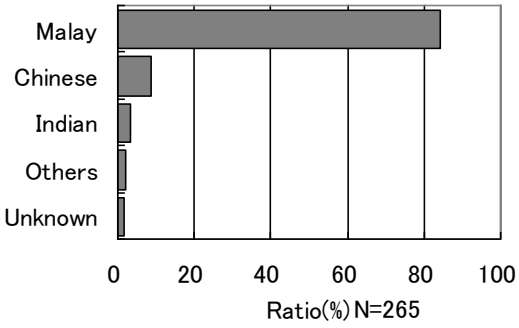


Figure 9 Frequency distribution of the respondents by race

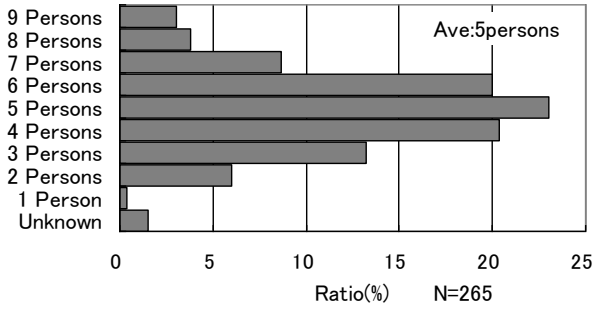


Figure 10 Frequency distribution of household size

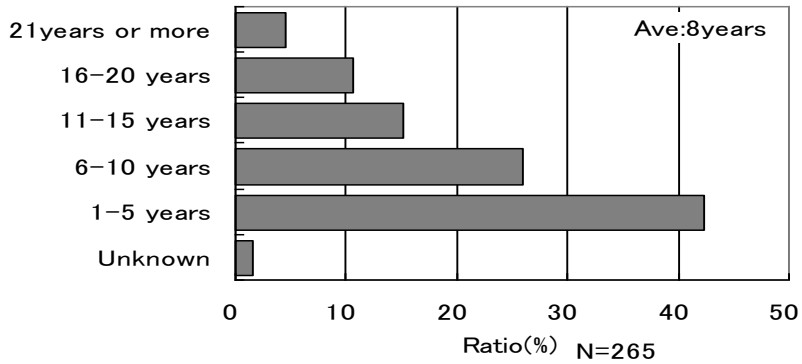


Figure 11 Frequency distribution of tenure of present dwelling

Perceptions of the residents toward living environment

The findings of the residents' perceptions on selected physical environmental parameters are shown in Figure 12. About 25% of the respondents perceived a "very noisy" or "noisy" living environment surrounding the study area. Specially, "traffic noise" was perceived as the most remarkable deterrent to the residents in terms of comfortable living environment in the study area (Figure 13) More than 80% of the respondents expressed "traffic noise" as the main source for noisy living environment. It is attributed due to "very high" average traffic volume near the selected study area. The measurement of traffic volume along the major arterial road (MRR2) which runs very near to the selected residential area has showed that the average traffic volume was 7800 vehicles per hour. However, the average traffic volume along the collector road was 1300 vehicles per hour whereas local roads 400 and 500 vehicles per hour (Abdul Azeez K.H. et.al., 2006). The other major source for "noisy" living environment was because of motorcycles traveling at very high speed. The average L_{Aeq} near the major arterial road was recorded to be 75.6 dB, thus exceeding the WHO recommended noise level. Whereas, the average L_{Aeq} along the road inside Taman Melati was recorded to be 65.2 dB (Abdul Azeez K. H. et.al., 2006).

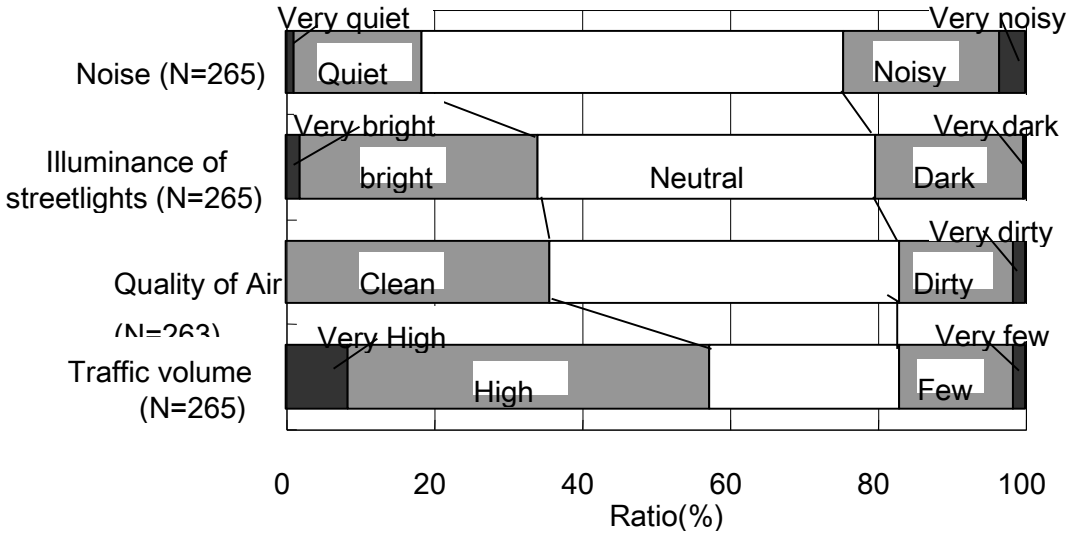


Figure 12 Residents' perceptions toward selected environmental factors

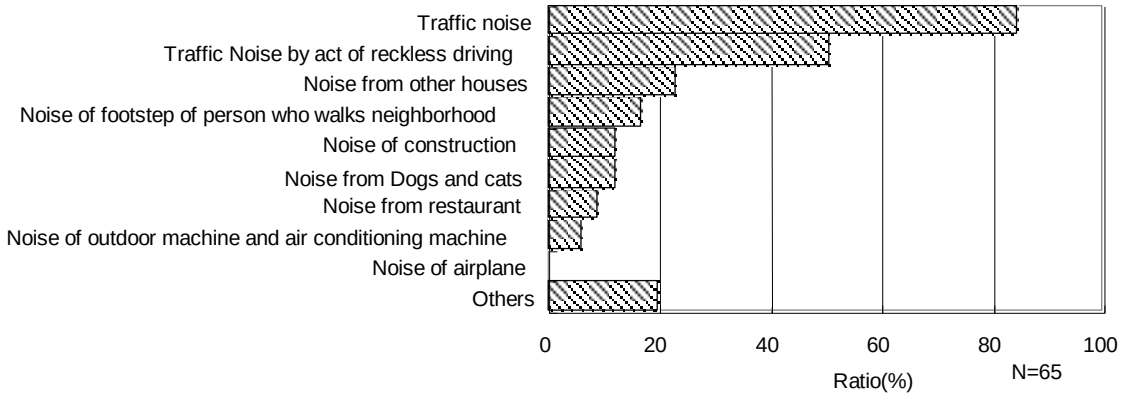


Figure 13 Residents' perceptions on sources of noise

Nearly 34% of the respondents expressed "very bright" or "bright" on streetlight illuminance at night. The measurement of horizontal plane illuminance under all streetlights at Taman Melati indicates, only about 35% of the streetlights were brighter (20lx and more) and remaining were darker (20lx and less). Among the darker spots, about 28% of the streetlights were measured 10-20lx, 19% 3-10lx, 4% 3lx or less and 14% were either damaged or off altogether (Abdul Azeez K.H. et.al., 2006). On surrounding air quality, about 36% of the respondents expressed "clean". The NO_2 concentration level was measured at Taman Melati as part of the analysis of air quality. NO_2 concentrations along minor roads and near parks and open spaces were mostly below the Malaysian air quality standard (0.020 ppm). However, the concentration of NO_2 was high along the major roads (0.025ppm and above) running at the periphery of Taman Melati neighborhood. Overall, the study found out that the NO_2 concentration at Taman Melati was ranging between 0.01 ppm and 0.04 ppm with the most common range of 0.014 and 0.016 (Abdul Azeez K.H. et.al., 2006). The perceptions of the residents on "traffic volume" has revealed that about 57% of the respondents expressed "very high" or "high" (Abdul Azeez et.al., 2004). Overall, these findings showed that the residents' satisfaction on "noise" and "traffic volume" was low, but was high on "air" and "streetlight illuminance".

Figure 14 shows the existing level of satisfaction on the living environment and level of expectation to stay further continuously at Taman Melati. The level of satisfaction of the residents on the living environment had showed nearly 64% of the respondents expressed "satisfied strongly" or "satisfied" and only less than 10% of the residents expressed "not satisfied". It is clearly seen that the overall satisfaction level of the residents on the living environment was high albeit satisfaction level on individual physical environmental parameters was low. The high overall satisfaction level on living environment has also allowed residents to express favorably on the willingness to stay further at Taman Melati. On the level of expectation or willingness of the residents to stay further continuously at Taman Melati, about 56% of the respondents expressed "willing strongly" or "willing" (Suto, A. et.al., 2003).

The perceptions of the residents on various facilities and services, with the anticipation to provide enhanced living environment at Taman Melati, were also noted and analyzed as shown in figure 15. About 60% of the respondents expressed "Increase of public facilities; e.g. library etc." was greatly needed as it presently stands at a low satisfactory level among the residents. Nearly 51% of the residents were expected to witness "Decrease of traffic noise" and 49% of the respondents

on “Clean air” within their vicinity of the study area as part of the living environmental improvement. It [illegible] dents’ demand to dec[illegible]he study area was found to be high among the physical environmental parameters. The findings also

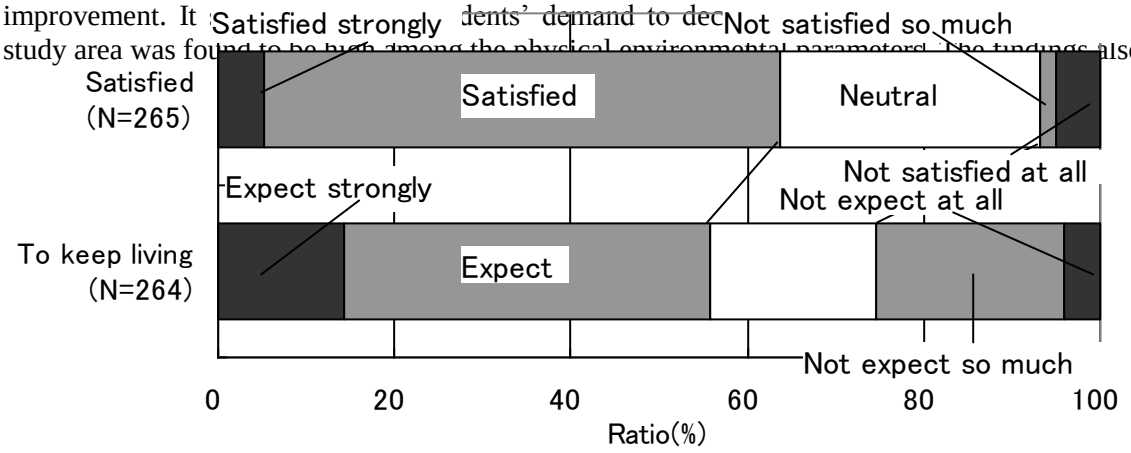
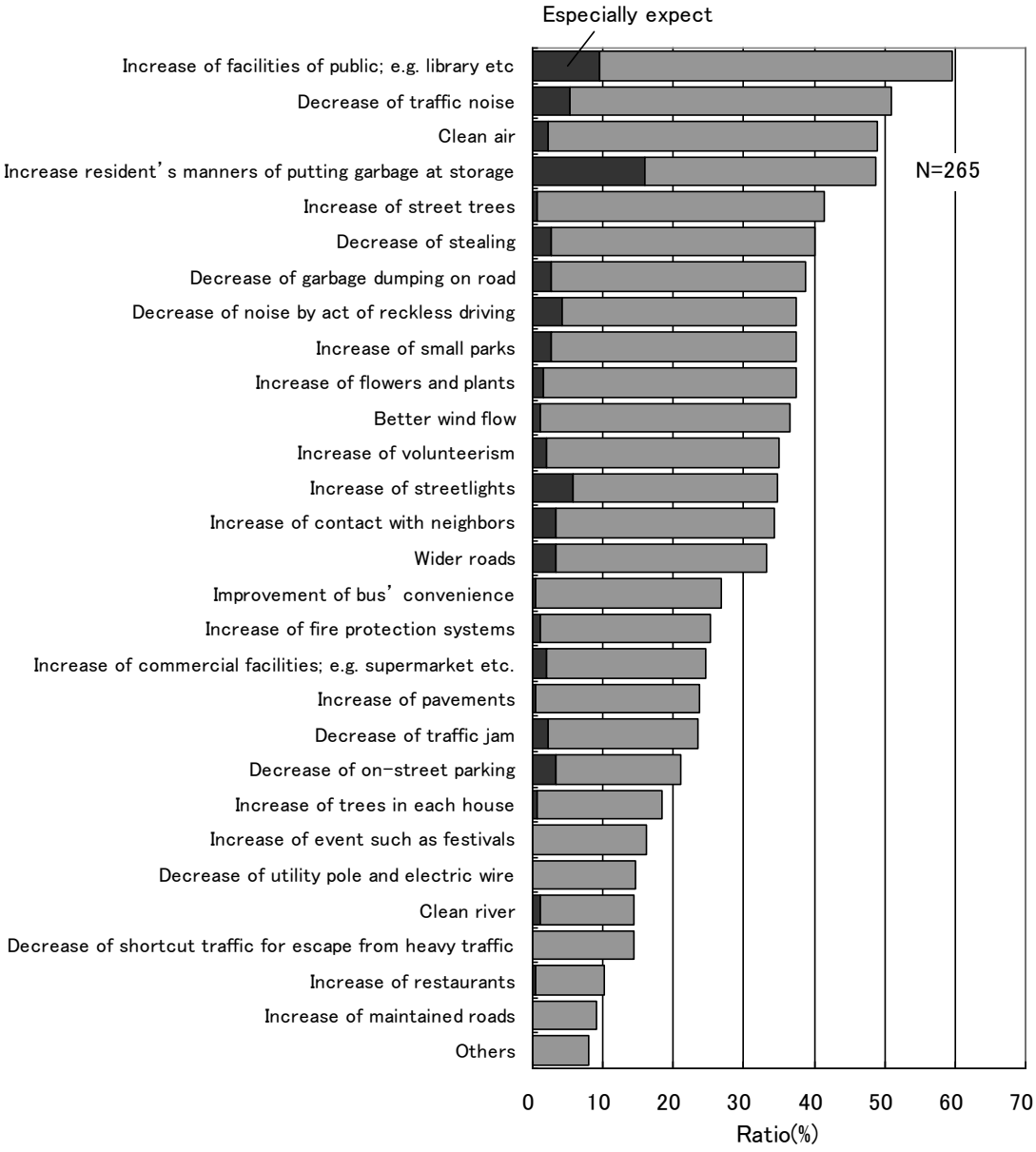


Figure 14 Level of satisfaction on living environment and expectation to stay further at Taman Melati



showed about 49% of the residents had expressed that lack of apathy by the residents in disposing garbage at the designated storage area and 39% of the respondents were expected to see "Decrease of garbage dumping on the road side" (Suto, A. et.al., 2003). Photo 3 shows interviewer posing questions to one of the residents at Taman Melati.

Figure 15 Residents' expectation toward facilities and services

Photo 3: Resident and Interviewer

CONCLUSIONS

Healthy, harmonious, pleasant and safe living environment in a residential area are considered basic requirements for well being of a community. It will, eventually, provide strong binding relationship between members of the community. Moreover, it will encourage effective involvement of the working population to further develop economy of the nation. It also reduces public healthcare expenditures significantly which normally found to take bigger proportion of the national budget. Moreover, it enhances the visual quality of the area. The findings of this study are expected to inculcate general awareness on the existing conditions of the physical environmental parameters by the residents of the study area.

The findings showed that residents of Taman Melati had expressed low level of satisfaction on each of the physical environmental parameters such as noise, especially traffic noise, surrounding air level, and streetlight illuminance at night (Appendix). It is evident that generally traffic volume on many urban roads including residential neighborhood has been increasing because of the increased number of registered vehicles every year. The average hourly traffic volume along arterial road (MRR2) near Taman Melati was 7800 vehicles per hour, collector road (Persiaran Pertahanan, T. Melati) 1300 vehicles per hour and local road (Jalan 2/5, 8/5, T. Melati) 500 vehicles per hour in 2003 (Abdul Azeez et.al, 2004, Mabeshima, D. et.al., 2003). The level of car ownership in Kuala Lumpur had increased from 616 per 1000 people in 1995 to 986 to 1000 people (almost one to one ratio) in the year 2000 (Eighth Malaysia Plan, 2000-2005). The number of motorcycles on many urban roads has also been increasing rapidly and it is one of the major contributing factors toward increased noise level at many residential neighborhoods in Kuala Lumpur. The increasing traffic volume also directly contributes to increase of carbon monoxide, NO_2 and other vehicle-related pollutants into the atmosphere and thus increasing level of air pollution. To exemplify, the NO_2 concentration at Taman Melati was measured ranging between

0.01 ppm and 0.04 ppm (Abdul Azeez et.al, 2004, Mabeshima, D. et.al., 2003) with 0.02 ppm as the acceptable level of NO_2 according to the Malaysian air quality standard. Measurement on the streetlight illuminance showed that, generally, the brightness level was low. The illuminance near the streetlights was high, and between streetlights was low. At few places, streetlights were blocked by trees and hence, the selected road was not properly illuminated and at other places they were turned–off. More than 50% of the streetlights along Jalan Taman Melati 7 had illuminance of 3lx or less (very dark spots) (Abdul Azeez et.al, 2004) (average horizontal plane illuminance should be 3lx according to streetlight standard for the pedestrian in Japan, JIS). Poor illumination of streetlights contributes to detrimental effects on the safety of residents at night as it may lead to crime and related activities.

It is seen that the overall satisfaction level of the residents on the living environment was high albeit satisfaction level on individual physical environmental parameters was low. Evidently, the residents showed greater inclination to continue stay at Taman Melati (more than 50% of the respondents). It draws how important that the residents felt to continue staying at Taman Melati despite low satisfaction level on the individual physical environmental parameters. Improving physical environmental parameters to an acceptable standard level would definitely help residents to live in a healthy, harmonious and safe environmental setting for the betterment of the society and nation at large.

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APPENDIX

Table A-1 shows the results of few open-ended questions about the "living environment at Taman Melati". The results are divided into the following 7 types (1) General, (2) Road, Tree, Parking, (3) Noise, Air quality, (4) Illuminance of streetlights, (5) Public facilities, (6) Safety, (7) Relation to neighbors.

Table A-1: Unedited results of open-ended questions about the "living environment at Taman Melati"

(1) General

"I think that Taman Melati is one of the place which has enough facilities and comfortable to live. The area is also next to the shopping complex and highway that linked the area to the other destinations such as Ipoh and Seremban. I am proud to be one of the residents here."

"Living in Taman Melati is good. Not much problem occurred."

(2) Road, Tree, Parking

"Please increase the number of trees along the road."

"I hope that, more trees will be planted and cleanliness aspect can be improved."

"Increase parking areas so children can easily walk around in safe condition. Add trees and flowering trees to beautify Taman Melati."

"Please increase safety aspects in Taman Melati. Especially for school children and elderly. Generally, Taman Melati lacking walkways to the playground."

(3) Noise, Air quality

" Environment in Taman Melati is clean and safe. Besides, the air is refreshing and cool."

"Before the LRT open, the main road (Road 2/5A) is quiet, the air is cleaner. After the LRT open, the road becomes busy, many cars, buses, motorcycles, passes by. People also 'racing' on the road (motorcycle). Very very noisy. Cannot sleep at night."

"Noise from vehicle is disturbing the kids."

(4) Illuminance of streetlights

"Living environment is okay. Need to increase number of lamp poles."

"It is too dark during the night. Sometimes feel unsafe."

"The area is dark at night. Number of lamp poles need to be increased."

(5) Public facilities

"Please increase public facilities for convenience such as garbage storage, seating, and hall."

"Playground in Taman Melati should be upgraded to increase the interest among resident. Especially facilities are needed for elderly and children."

"Put more public facilities such as public phone. There is no public phone around."

"Living here is okay, near to LRT, and KL. But the small mosque and community hall is very far away, should provide more small mosque."

"The environment is good and near to LRT. But, local authority need to provide better public facilities like public phone."

(6) Safety

"A lot of stealing, however the overall living condition here is satisfying."

"I hope the police can make check-up around here often."

"In the evening a lot of car park here along the road. Also a lot stealing, young people hanging around at night. Hope the police can make check-up every once in a while."

"Number of lamp poles should be improved and police need to check the area consistently because robbery is happening in the area lately."

(7) Relation to neighbors

"Taman Melati is a good residential area. The living environment is harmony. Residents are also very friendly."

"Hope the residents can make more volunteerism to reduce the stealing and to know each other."

"Good relationship with neighbors but not too close."

"The residents have a very good neighborhood spirits and attitude of interactions. Peaceful and conveniences are guaranteed only the youth are involved in the crime. However, lately, it has been decreased from time to time."