YOUNG LANDSCAPE ARCHITECTS' PERCEPTIONS FOR MALAYSIAN RECREATIONAL FORESTS

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ABSTRACT

The beauty of Malaysia's recreational forests depends on the quality of their natural landscapes. These include flora and fauna, soil, topography/landform, geological features, and water bodies. Man-made elements such as bridges, litter bins, walkways, playground equipment, and shelters also contribute to the forests' landscape beauty. Natural assets and man-made elements need to be in harmony with one another to maintain the visual attractiveness of these forests. However, there have been few studies on young landscape architects perceptions of Malaysia's recreational forests. This study aimed at understanding this group of professionals' perceptions of recreational forests and their site development in Malaysia. Two recreational forest sites were selected for this study. They are Sg. Chongkak Recreational Forest and the Ampang Recreational Forest in Selangor. A survey was conducted using photo-questionnaires with photographs as surrogates of the actual environment. A total of 119 young landscape architects participated in this study. Results showed that these young landscape architects perceived the natural landscapes of both parks as decent but the man-made facilities in both forests did not harmonize well with the existing natural surroundings. The findings in a form park management with regards to managing the beauty of recreational forests and efforts should be geared towards appreciating their aesthetic values, the architecture, and the overall ecology of these recreational forests.

Keywords: *Malaysia's forest, recreational, landscape architect, perception*

1. INTRODUCTION

The idea of recreational forests originated in Europe during medieval times when royalty and the aristocratic class took part in hunting (Bell & Petursson, 2009). In the United States, forest recreation was first officially established in 1905 as a locus for recreation for the growing urban population spurred by rapid industrial growth (Cregan & Murphy, 2006). In Malaysia, the first recreational forest, the Templer Recreational Forest was officially opened by Sir Gerald Templer, the British High Commissioner in Malaya before Independence, in 1954 (Mohd Kher, 2012). Today, recreational forests are created for the economic benefits as well as fulfilling people's need for leisure and recreation. Most recreational forests in the Country are equipped with basic facilities such as chalets for users to stay overnight. However, these developments put pressure on the pristine forests and their surrounding areas.

Malaysia's recreational forests are a significant recreational and tourism asset. Visitors seek to view and experience the diversity and beauty of the tropical forests ecosystems. These forests are endowed with diverse flora and fauna as well as other natural attractions (Nur Hafizah, 2014). Moreover, these forests allow people to experience outdoor activities such as bird watching and other wildlife viewing, jungle trekking, camping and nature walks, jogging, mountain biking, and, in some areas, bathing, freshwater fishing, canoeing, kayaking, rafting and river tours. Idris, et al. (2013) reported that more than 500,000 visitors visited the 10 recreational forests in Selangor in 2011. The Bukit Nenas Recreational Forest alone received 5,278 foreign and 1,092 local visitors in 2011 (Forest Department of Peninsular Malaysia, 2012). Most of these visitors aged between 15 to 40 years old.

Malaysia defined recreational forests as an area of Permanent Forest Estate used for leisure, sports, research activities, and education as well as for

conserving flora and fauna (Manual Perhutanan 2003, p. 1628, 2005). These forests are provided with constructed facilities to attract visitors (WWF Malaysia, 1996) and serve as areas for urban dwellers to escape from the hectic and stressful city life. Recreational forests consists of natural landscapes (e.g.: vegetation, soil, land form, geology, fauna and water bodies) and man-made elements (e.g.: bridges, litter bins, walkways, and shelters) can to attract the younger age groups to indulge in physical activities.

Malaysian recreational forests have been designated for public recreational uses since the First Malaysian Plan (Nor Azlin, 1999). In pursuant to the National Forestry Act, these forests are continuously being developed in the Malaysia five year plans (Jalil & Chee, 1983). In 2011, the Forest Department of Peninsular Malaysia listed 124 recreational forests that were still opened to the public (Idris, et al., 2013). The goals of their establishments are to provide places for the public to relax and carry out outdoor family or group activities; to create awareness among the public on the importance of maintaining the environment for a better life; to enhance individual performance and to escape from the stress of work and busy city life; to provide opportunities for the public to explore forest areas and enjoy its natural beauty; to function as open laboratories for conducting research and education; and as ecotourism attractions for additional revenue to the Country (Forestry Department of Peninsular Malaysia, 2013).

Yet despite their values as a major tourist attraction, these forest environments are sensitive to environmental damage and degradation. These include soil compaction, fire damage, vegetation trampling, water contamination, and soil erosion. Irresponsible waste and trash disposal, unmanaged interaction with flora and fauna, and uncontrolled modification of landscapes from soft adventure activities also became major problems as well as causing disturbances to wildlife and the habitat. Over time, these cumulative impacts caused eroded and unattractive landscapes, poor habitat, sparse vegetation, polluted rivers and fewer animals and birds for visitors to enjoy. These greatly reduce the attractiveness of the forest destinations for tourists. In addition people in general are sensitive to human interventions, especially local infrastructure provisions and signs of human presence (Qiu et al., 2013).

This paper presents a study on young Malaysian landscape architects' perceptions of current development in the recreational forest in light of their conservation. Landscape architect is a relatively young profession in Malaysia but its contribution towards the planning and design of natural landscapes is getting more significant. It is important to solicit landscape architects' views of these forests because they are now perceived by other land development professionals as important contributors in the planning, design, and construction related to natural areas. They are more involved in the initial stages of a design or restoration project, contributing more to the functional and aesthetic aspects of site design (Minich, 2011). Even though recreational forests in Malaysia had been developed for more than 50 years, there has never been a study on how professionals like landscape architects perceive their development.

Being young Malaysians, these landscape architects are also frequent users of the recreational forests. This group had shown more favourable attitudes towards the forest landscape compared to older groups who have relatively low preferences for the wilderness but rather higher preferences for managed natural settings. This is due to the older groups greater physical and physiological vulnerability, which may make them more at risk from the dangers of wilderness areas (van den Berg & Koole, 2006). Landscape architects are more aware of landscape degradation due to their better understanding of landscape perception through their professional educational. Thus, it is assumed that information gained from them are more reliable for use as a basis for creating a framework for policy formulation, planning, assessment, and monitoring of landscapes as well as to support decision-making (Tveit & Ode, 2014).

2. YOUNG GROUP AND RECREATIONAL FORESTS

Malaysia's National Youth Development Policy (1985) defines "young" as those between the ages of 15 and 40 years. This age group prefers to do outdoor recreational activities such as camping, jungle trekking, and other similar activities. Recreational forests are able to offer these activities for the young to enjoy through the provision of facilities and amenities (Zainol & Au-Yong, 2016). Apart from sites, facilities, and safety, the ability to perform physical activities also play a significant role in attracting these youngsters to spend their time in recreational parks (Baran et al., 2013). According to Gardsjord et al. (2014), the young tended to visit parks to enjoy the outdoors and natural scenery, provided there are some attractive features (Zainol & Au-Yong, 2016). Furthermore, outdoor activities benefit the young in terms of satisfaction and personal development as well as to promote social interactions among them. Bell et al. (2007) suggested that mental well-being is also supported through the role of play in helping to establish personal and community identity for young people and children. The most important benefit of forest is that it has a positive influence on the psychological and physiological health of people (Tyrväinen et al., 2014).

Recreational forests provide numerous resources for human well-being such as trees, scenic views, geological formations, river, and lakes (Chen et al., 2016). These resources influence the aesthetic, recreational, educational, and cultural aspects of people. However, these landscape resources could change dramatically when they are not managed properly and will impact future young generations. Therefore, there is a need to understand how young people perceive and use recreational forests. Thus, this study attempts to understand young landscape architects' perceptions on recreational forest development based on their knowledge of the environment and its planning and design. It is necessary to understand their perceptions and thoughts in connection with landscape management and conservation practices because they will inherit these landscapes in the future. The younger generations will inherit the impacts of large-scale landscape changes and will likely live longer and experience the consequences of those changes (Chen, 2016).

Recreational forests contain diverse flora depending on their location and site characteristics such as altitude. The diversity of these species has increased forests beauty. For instance, the floor of montane ericaceous forests (above 1,500 meters altitude) are mostly dominated by species from the Ericaceae family while lowland Dipterocarp forests are dominated by Meranti and Balau (Shorea spp) and Kapur trees (Dryobalanops aromatica). In many coastal and riverine areas, mangrove (Rhizophora spp) forests with their unique stilt roots and pneumatophores as well as thick leaf structures dominate the area. The diverse vegetation found in the recreational forests provides interesting opportunities for the young users to have nature-based outdoor activities such as nature study, camping, and conservation work. This will enhance the young people's' mind towards forests as well as building up their responsibility towards nature.

Moreover, wonderful topographical features in recreational forests such as waterfalls and mountainous terrain become attractions to young people to enjoy the panoramic view of the forest. A study done by Mapjabil et al. (2015) discovered that waterfalls and rivers are the major attractions that draw young visitors to visit these recreational forests. Besides visual appreciation, the uneven terrain provides the young with challenging activities such as mountain biking, climbing and hiking. Geological features such as the limestone and rock outcrops (granitic rock and megacrystic granite) displaying varied textures offer young recreationists geological experiences. Water flows on the hard geological surface of granite rocks, and falls from the hills and rapids, offer waterfalls and lakes for bathing and swimming. Caves found in hilly areas offer opportunities for visitors to these forests to enjoy nature through caving activities. These nature's gifts are priceless and need special care and attention from everyone because they tell the story of the Earth's early formation.

On the other hand, landscape architects also understood that the varieties of wildlife in recreational forests can provide enjoyment for them. Their activities include observing wildlife, participating in outdoor activities such as bird watching, insect collecting, photography, hunting and fishing (University of California, 2007). Forest mammals such as monkeys, otters, deer, rodents and rabbits are the most recognized wildlife. Meanwhile, birds add colour, movement, and sound to these forests and play crucial roles in the forest ecosystem by dispersing seeds, pollinating plants, and by eating insects and rodents.

Despite the numerous opportunities provided by the recreational forests, there is currently little empirical evidence on how young professionals, especially young landscape architects perceive the forests. Thus, it is important to investigate their insights because they have been exposed in evaluating and understanding landscapes. They were trained to observe and judge specific landscape attributes based on the principles of art, design, resource management, and ecology. They also act as representative of the younger generation that forms the highest percentage of recreational forests' users. A study carried out by Tierney et al., (2008) found that young people (more than 50% out of 1828 respondents ages 18-44 years surveyed) made up the most number of visitors visiting natural areas in Barcelona (Spain), Glasgow (UK), Los Angeles (US) and Morelia (Mexico). Furthermore, Rosilawati et al. (2012) found that the mean age of respondents in their study was 23.96 years old with a minimum age of 14 years (3%) and a maximum age of 48 years (1%). These results can be used to understand young users' needs and wants in recreational forests. The information is useful for park planners and managers in their efforts to improve the recreational forests.

Managing aesthetics and scenic landscape qualities are part of landscape architects responsibility. Laughlin (1984) carried out a study on attitudes of landscape architects in the USDA Forest Service toward the Visual Management System (VMS). The majority of landscape architects in the Agency were between the ages of 30 and 50 years old (54% below 40 years old, which is considered as young). The study was designed to explore the attitudes and opinions of this professional group towards the VMS and to determine their perceptions of the relationship between the methodology and the management of the National Forests. Based on the attitudes expressed, projections were made on the probability that the VMS provided a firm foundation to manage the forest visual resource. Thus, it can be seen that study about landscape perception is necessary in order to know what people like or dislike as well as to know how people view their landscapes.

Landscape architects can take a leading role in fostering environmental consciousness among foresters, land planners and designers towards conserving

recreational forests. This can lead to healthy recreational forests development in Malaysia. Thus, understanding the sense of beauty of recreational forests, requires an understanding of how people perceive it. Lückmann et al. (2013) suggested that it would be valuable to take the time and effort to investigate adolescents' insights into landscapes if we want to understand what different landscapes in botanical gardens mean to young people. Therefore, the aim of this study is to analyse and understand young Malaysian landscape architects' visual scenic perception of recreational forests.

3. METHOD

Data was gathered through a survey using a photo-questionnaire with photographs as surrogates of the actual environment. The Sungai Congkak Recreational Forest (SC) and Ampang Recreational Forest (AR) (Figure 1) were selected because they are among the more popular recreational forests in Selangor, Malaysia.

A total of 119 young landscape architects participated in the study. They made up of 12% out of 975 members of the Institute Landscape Architect, Malaysia (ILAM) in 2016. Participants were selected based on judgemental or expert sampling from a list of landscape architects provided by the Institute and based on the following criteria: a) their companies must be more than a year old, b) must be registered with ILAM, c) they must have worked for more than a year, d) have a degree in landscape architecture, and e) willing to volunteer for the survey. Once identified, they were contacted and invited to participate. The respondents were then briefed on the procedure and supplied with self-administered photo-questionnaires.

A set of colored photographs representing a variety of natural recreational forest landscapes (vegetation, soil, topography, geology, and water bodies), facilities (benches, toilets, wakafs, etc.), site layout, and maintenance activities made up the photo-questionnaire (Figure 2). All photographs were taken at eye level using a digital camera with a lens set at 50 mm, horizontal views, and proper angles (balance, depth, focus and panoramic). The photographic-collection was screened to remove poor quality and inappropriate photographs. There were 69 photographs chosen and used in this photo-questionnaire survey (39 photographs of SC and 30 photographs of AR). These images depicted Natural Settings (NS) (27 photographs), Design Elements (DE) (14 photographs), and Maintenance Aspects (MA) (14 photographs). The layout plans of the study sites representing site planning were also attached to the survey instrument. The photographs were taken from the study sites during a fieldwork on sites' existing conditions. To ensure the photographs were without bias, they were shown to other researchers for validation. A Likert scale (5 = very good; 4 = good; 3 = normal; 2 = bad; 1 = very bad) was used to measure respondents perception. Foursets of evaluation forms together with the photographs were distributed to four respondents respectively. The evaluation forms were collected after three days to allow the evaluators enough time for their evaluation. Fortunately, all of the respondents are able to complete the task within the time given. Landscape variables had been grouped into the five parameters in this study (Table 1).

Table 1: Landscape parameters

Parameters	Variables
Natural Landscapes	Vegetation, Soil, Topography, Geology and Water
Design	Facility and Accommodation
Planning	Layout and Respect to nature
Maintenance	Natural elements and Man-made elements
Cleanliness	Site condition

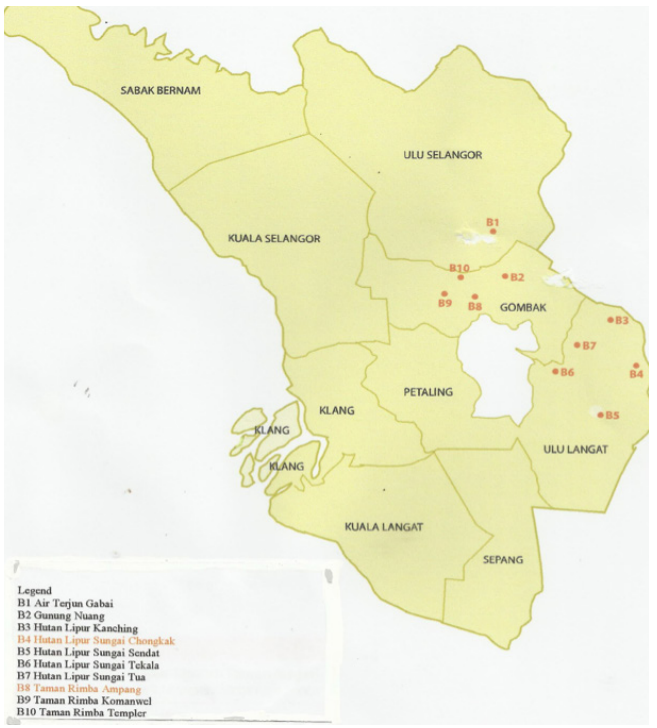


Figure 1: Location of Sg. Chongkak Recreational Forest and Ampang Recreational Forest

1. Natural Landscapes

Vegetation

Soil

Topography

Geology

Water

2. Designs

Building

Playground

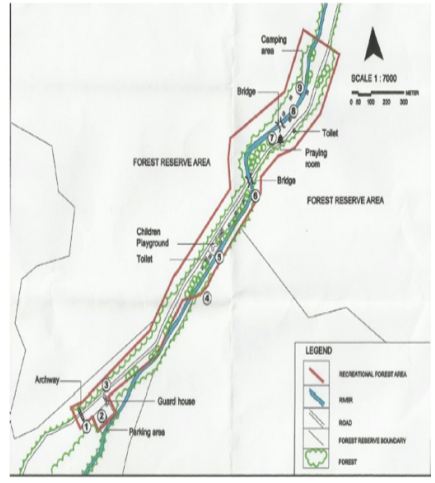
Shelter

Bridge

Lamp post

3. Planning

Layout of Sg. Chongkak Recreation Forest



Layout of Ampang Recreational Forest

Forest

Respect to nature – scale/size

Respect to nature - location

Respect to nature - colour

Respect to nature – form/shape

Respect to nature - material

4. Maintenance

Vegetation

Barbeque grill

Camp site

Pergola

Signboard

5. Cleanliness

The dry leaves swept

Road surface

Grass cutting

Pathway cleanliness

Water quality

Figure 2: Sample photographs of recreational forest scenes

4. RESULTS AND DISCUSSION

4.1 Demographic

This study had grouped the respondents' age according to the Malaysia's National Youth Development Policy (1985) it is between the ages of 15 and 40 years. They were grouped into three group categories with twelve years intervals (Table 2). These are labelled as Teenagers (15 – 27 years); Adolescents (28 – 40 years); and Elderly (> 40 years). However, this study found that young landscape architects in Malaysia's usually start work at the age 23 years old, that is, after their graduation. Therefore, the Teenagers group for this study actually is from the ages of 23 to 27 years old. Table 3 shows that the majority of respondents were in the Teenager group (58.82%), while the Adolescents made up 39.50% of the respondents. The ethnic backgrounds of the respondents were Malays (82.35%), Chinese (15.97%), and Indians (1.68%). Malay respondents were dominat in this study because the majority of ILAM members are in this ethnic group.

Table 2: Respondents background

Respondents		Total	Percentage (%)
Gender:	Male	51	42.86
	Female	68	57.14
Young	teenagers (15– 27)	70	58.82
Groups (years):	adolescents (28– 40)	47	39.50
	elderly (>40)	2	1.68
Ethnicity: Malay	98	82.35	
	Chinese	19	15.97
	Indian	2	1.68

It was also reported here that none of the respondents rated for all the variables as "normal" thus, this value was not shown in the Table 2.

Table 3 shows respondents' perceptions on the landscape attributes of the study sites. Most of them perceived the natural landscapes of both forests as "decent." This means that the vegetation, soil, topography, and water quality in the study sites are acceptable to the respondents.

a. Vegetation

The existing vegetation in both recreational forests are perceived to be in good conditions (SC: n=78; 65.55%; AR: n=73; 61.34%). This is true where both parks are still densely covered with big, tall trees, and thick undergrowth. The dense stands of trees provide shelter from the sun.

b. Topography

Most respondents perceived the topography in SC more attractive than in AR (SC: n=86; 72.27% while AR: n=65; 54.62%). It was observed that SC has a larger flat area providing ample space for users to carry out their leisure activities. They also perceived that SC has better geological features (n=82; *68.91%) and water features (n=82; 68.91%) compared with AR (Geology: n=70; 58.82%; Water: n=62; 52.10%). In fact, the main stream in SC runs a straighter course through the recreation forest. It also has gentle riverbanks and continuous, voluminous, and clear water. On the other hand the stream in AR does not have any waterfall or rapid, and thus lacking interesting opportunity for recreational activities*.

c. Natural setting

It shows clearly here that the natural settings of both recreational forests (including plants, animals, insects, etc.) were perceived to be in good condition as captured by many of the images presented to the respondents. The positive perceptions of the respondents in this study have been influenced by the richness, diversity, and variety of the vegetation as well as the existence of water elements which were present in the given photographs.

d. Layout

Most of the respondents preferred the layout of SC and described it as attention-grabbing as compared to the layout in AR (SC: n=86; 72.27%; AR: n=68; 57.14%).

e. Design of facilities

Only half of the respondents perceived the design of existing facilities to be in harmony with the surrounding forest environment (SC: n=56; 47.06% and AR: n=55; 46.22%). This indicates that the designs of the facilities are less integrated with the surrounding natural features. Thus, this contributes to the reduction of aesthetic values and decreases the pleasurable experiences of users. However, slightly more than half of the respondents perceived the planning and design of both recreational forests as respecting nature (SC: n=67; 56.30% and AR: n=61; 51.26%).

f. Maintenance aspects

With regard to site maintenance, slightly more than half of the respondents perceived this aspect as good for the natural elements (SC: n=73; 62.18% and AR: n=77; 64.71%), while half of them perceived man-made elements to be in good condition (SC: 50.42% and AR: 54.62%). Nevertheless, only half of the respondents perceived the state of cleanliness as good for SC (n=62; 52.10%) and AR (n=60; 50.42%). Therefore, more efforts are required for the management of both places to increase the maintenance quality. Maintenance can adversely affect users' experiences of the recreational forests (Mohd Kher, 2014; Dorwat, 2004).This is in line with a study by Bedimo-Rung et al. (2005) who concluded that badly maintained green spaces may fall into disrepair and lower the visual qualities of the setting. It may give the impression that negative social behaviours are accepted.

In general it can be said that there is good management planning in both study sites. However, only between 47-72% of respondents perceived the overall attributes as good. This means that there is a need to improve the planning and management of their resources in the future to protect their

attractiveness. This calls for better emphasis on strategic and operational training of personnel involved to protect the park's attractiveness, which are especially sensitive to visual alterations. Otherwise, the beauty of these two recreational forests continues to degrade and reduce their attractiveness to visitors.

Table 3: Young professional landscape architects perception of landscape of the study sites

Subject		Very Good		Good		Bad		Very bad		Mean	Std.
		n	%	n	%	n	%	n	%	Score	Deviation
Sg. Chongkak Recreational Forest											
Natural Landscapes: Vegetation		28	23.53	78	65.55	10	8.40	3	2.52	3.10	0.64
	Soil	12	10.08	72	60.50	33	27.73	2	1.68	2.79	0.64
	Topography	11	9.24	86	72.27	22	18.49	0	0.00	2.91	0.52
	Geology	25	21.01	82	68.91	12	10.08	0	0.00	3.11	0.55
	Water	25	21.01	82	68.91	11	9.24	1	0.84	3.10	0.57
Planning &	Layout	12	10.08	86	72.27	19	15.97	2	1.68	2.91	0.57
Design:	Facility	10	8.40	56	47.06	49	41.18	4	3.36	2.61	0.69
	Respect to nature	28	23.53	67	56.30	20	16.81	4	3.36	3.00	0.74
Maintenance:	Natural elements	19	15.97	74	62.18	21	17.65	5	4.20	2.90	0.71
	Manmade elements	8	6.72	60	50.42	45	37.82	6	5.04	2.59	0.69
	Cleanliness	8	6.72	62	52.10	41	34.45	8	6.72	2.59	0.72
Ampang Recreational Forest											
Natural Landscapes: Vegetation		43	36.13	73	61.34	3	2.52	0	0.00	3.34	0.53
	Soil	12	10.08	63	52.94	43	36.13	1	0.84	2.72	0.65
	Topography	17	14.29	65	54.62	37	31.09	0	0.00	2.83	0.66
	Geology	13	10.92	70	58.82	36	30.25	0	0.00	2.81	0.61
	Water	22	18.49	62	52.10	27	22.69	8	6.72	2.82	0.81
Planning &	Layout	25	21.01	68	57.14	24	20.17	2	1.68	2.97	0.69
Design:	Facility	34	28.57	55	46.22	27	22.69	3	2.52	3.01	0.79
	Respect to nature	19	15.97	61	51.26	36	30.25	3	2.52	2.81	0.73
Maintenance:	Natural elements	26	21.85	77	64.71	15	12.61	1	0.84	3.08	0.61
	Manmade elements	16	13.45	65	54.62	35	29.41	3	2.52	2.79	0.70
	Cleanliness	25	21.01	60	50.42	31	26.05	3	2.52	2.90	0.75

5. COMPARISON OF LANDSCAPE ATTRIBUTES

A paired-samples t-test was used to compare the landscape attributes of both study sites. Table 4 shows the differences in perceptions of landscape attributes between Sg. Chongkak Recreational Forest (SC) and the Ampang Recreational Forest (AR). There are significant differences in the perceptions of vegetation, geological features, water, facilities, maintenance, and cleanliness at both sites. Respondents perceived vegetation in SC (M=3.10, SD=0.64) as less attractive than AR (M=3.34, SD=0.53), t(118) = -3.45, p = 0.000. This could be due to AR having good maintenance and tree stands with trimmed hedges along the roads, which provides neat and attractive image of the area. They also perceived the geological features of SC (M=3.11, SD=0.55) to be more attractive than AR (M=2.81, SD=0.61), t(118) = 4.44, p = 0.000. This could be attributed to the river in SC having more attractive rock formation with smooth and beautifully formed boulders and rocks.

They also perceived water in SC (M=3.10, SD=0.57) to be more attractive than water in AR (M=2.82, SD=0.81), t(118) = 3.99, p = 0.000. The water in SC is well acknowledged by past visitors for its coolness, refreshing, and clear due to the upper region of the river passing through undisturbed forest. On the other hand the water quality in AR is frequently low, the flow is tediously slow, and the water quality deteriorates further due to the construction of the East Klang Valley Expressway (EKVE) project which when completed will run through the Ampang forest reserve. In terms of appearance of facilities AR (M=3.01, SD=0.79) was perceived better managed and tidy compared with SC (M=2.62, SD=0.69), t(118) = -4.54, p = 0.000 This is based on the photographs supplied to them in the photo-questionnaire.

In term of maintenance of man-made elements, respondents perceived them as fairly well maintained in AR (M=2.79, SD=0.70) as compared to SC (M=2.59, SD=0.69), t(118) = -2.83, p = 0.005. This could be due to the low maintenance work appearing in SC's photographs where the colours of the structures appeared dull and untidy. In some ways, what they see in the photographs represented the aspect of site maintenance because a majority of the landscapes had been evaluated, appreciated and perceived according to situations with good maintenance functions as the enhancement (Nassauer, 1997). Finally, the respondents had differences in perceiving cleanliness. Table 5 shows that they considered AR (M=2.90, SD=0.72) cleaner and tidier than SC (M=2.59, SD=0.72), t (118) = -3.69, p = 0.000. This could be the result of SC receiving a higher number of visitors than AR leading to higher maintenance load in the former than the latter. Furthermore, there is also a higher problem with vandalism and littering within the area ever since the recreation forest was established.

6. CONCLUSION

This study found that young Malaysian landscape architects perceived the forest recreation management cared for their landscapes and the undisturbed natural vegetation provided good ambiance and visual attractiveness for recreation activities. They also perceived that the sites are planned with respect for nature. However, many of them felt that the design of the facilities such as the benches and playground equipment did not harmonize well with the forest surroundings in term of colour and material used. They also agreed that the maintenance of the sites could be further improved.

The landscape architects opined that the management of these recreation forests needs to ensure that the landscape beauty of the forests should be of high quality to give pleasurable experiences to visitors. Landscape resources should be protected as they are the Country's valuable heritage to be enjoyed

Table 4: The differences of young professional landscape architects perception towards landscape beauty of the study sites

	Sg. Chongkak Recreational Forest		Ampang Recreational Forest		Pair t-test		
	Mean	Std. Deviation	Mean	Std. Deviation	df	t	p
Geology	3.11	0.55	2.81	0.61	118	4.44	0.000**
Vegetation	3.10	0.64	3.34	0.53	118	-3.45	0.001**
Water	3.10	0.57	2.82	0.81	118	3.99	0.000**
Respect to nature	3.00	0.74	2.81	0.73	118	2.81	0.006
Topography	2.91	0.52	2.83	0.66	118	1.04	0.301
Layout	2.91	0.57	2.97	0.69	118	-0.94	0.348
Maintenance of natural	2.90	0.71	3.08	0.61	118	-2.51	0.013
Soil	2.79	0.64	2.72	0.65	118	0.83	0.407
Facility	2.62	0.69	3.01	0.79	118	-4.54	0.000**
Maintenance of manmade	2.59	0.69	2.79	0.70	118	-2.83	0.005**
Cleanliness	2.59	0.72	2.90	0.75	118	-3.69	0.000**

Notes: **significance at the 5% level

by the present and future generations. The natural landscapes are important resources for people. Therefore, the management needs to reduce impacts on these resources. They should provide quality outdoor recreation opportunities to visitors so that they can enjoy quality outdoor recreation experiences in these forests. Managing and keeping recreational forests beautiful will bring environmental, social, and economic benefits. Comprehensive management plans for these sites are vital and they should be sensitive to the main forests parameters which are the natural landscapes, design, planning, maintenance and cleanliness. Insensitivity to these attributes can contribute to the degradation of landscape beauty of these forests.

This study highlighted the need for recreational forest management to take concrete actions to improve the manmade elements. The management should realize that it is very important to have recreational forests that offer harmonized facilities and accommodation with the existing forest environment so that it can enhance the forest beauty and at the same time provide convenience to users. Maintenance aspects also need to be given priority by the management as these were perceived to be less satisfactory. In relation to this, the maintenance aspect is vital in providing a good recreation ambiance and quality experience to users and indirectly this can enrich their quality of life and wellbeing.

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REFERENCES

Baran, P. K., Smith, W. R., Moore, R. C., Floyd, M. F., Bocarro, J. N., Cosco, N. G. & Danninger, T. M. (2013). Park use among youth and adults: examination of individual, social, and urban form factors. *Environment and Behavior*. doi: 10.1177/0013916512470134.

Bedimo-Rung, A.L., Mowen, A.J. & Cohen, D.A. (2005). Significance of parks to physical activity and public health: a conceptual model. *American Journal or Preventive Medicine,* 23 (2S): 5L 14.

Bell, S., Liisa Tyrv¨ainen, Tuija Siev¨anen, Ulrike Pr¨obstl and Murray Simpson. (2007). Outdoor recreation and nature tourism: a European perspective. *Living Rev. Landscape Res.,* 1(2). retriewed from, http://www.livingreviews.org/lrlr-2007-2.

Bell, S. & Petursson, JG. (2009). Introduction in *European Forest Recreation and Tourism Handbook*. Taylor & Francis Group.

Chen, Y., Sun B., Liao S.B., Chen L. & Luo, S.X. (2016). Landscape Perception based on personal attributes in determining the scenic beauty of in-stand natural secondary forests. *Ann. For. Res*. 59(1): 91-103.

Chen, Y. (2016). *Understanding youth landscape perceptions and mapping landscape values via social media*. Unpublished. Master of Environmental Studies. Dalhousie University Halifax, Nova Scotia.

Cregan, M & Murphy, W. (2006). *A review of forest recreation research needs in Ireland*. COFORD, Dublin.

Dorwart, C. (2004). *Managing visitors' perceptions: find out why park managers need to understand how a visitor perceives recreation resource impacts*. National Recreation and Park Association. New York: Gale Group.

Forest Department of Peninsular Malaysia. (2012). *Compendium of amenity forests and state parks forests in Peninsular Malaysia*. Retrieved from www.forestry.gov.my.

Forest Department of Peninsular Malaysia. (2013). *Amenity forest & state park forest*. Retrieved from www.forestry.gov.my.

Gardsjord, H. S., Tveit, M. S. & Nordh, H. (2014). Promoting youth's physical activity through park design: linking theory and practice in a public health perspective. *Landscape Research,* 39(1): 70-81. doi: 10.1080/01426397.2013.793764

Idris, N., Aziz, A., Mariapan, M., & Jamaludin, M. (2013). Attractiveness of

recreational forests: an overview on selected researches. *International Journal of Independent Research and Studies,* 2(3): 102-108.

Jalil Md. S. & Chee, T. Y. (1983). Hutan-hutan rekreasi diSemenanjung Malaysia - konsep dan perlaksanaan. Paper presented at the *Rekreasi Luar di Malaysia - Jalan-bicara: Seminar Kebangsaan, Taman Negara dan Taman Bandaran untuk Rekreas*i, 87-98.

Laughlin, Nora Alix. (1984). *Attitudes of landscape architects in the USDA forest service toward the visual management system*. Unpublished Master of landscape architecture thesis. The University of Arizona.

Lückmann, K., Lagemann, V. & Menzel, S. (2013). Landscape assessment and evaluation of young people: comparing nature-orientated habitat and engineered habitat preferences. *Environment and Bahavior,* 45(1): 86-112.

Manual Perhutanan 2003 Jilid III. (2005). Jabatan Perhutanan Semenanjung Malaysia, Kuala Lumpur.

Mapjabil, J., Marzuki, M., Mohd Zainol, R., Mat Jusoh, A.T., & Ramli, R.R. (2015). Applying sustainability indicators to eco-tourism development: the case of Jeram Linang amenity forest, Kelantan. *Malaysian Journal of Society and Space,* 11 (12): 64 - 73.

Minich, N.A. (2011). The role of landscape architects and wetlands. In: LePage B. (eds) *Wetlands*. Dordrecht: Springer.

Mohd Kher Hussein. (2014). Sustainability of three recreational forest landscape management in Selangor, Malaysia. *Journal of Design and Built Environment,* 14(2):1-16, December 2014.

Mohd Kher Hussein. (2012). *Persepsi Pihak Berkepentingan Terhadap Pembangunan Dan Pengurusan Landskap Hutan Rekreasi Di Selangor, Malaysia*. Unpublished PhD. thesis. Universiti Kebangsaan Malaysia, Malaysia.

Nassauer, J.J. (1997). *Placing nature: culture and landscape ecology*. Washington D.C.: Island press.

National Youth Development Policy. (1985). Retrieved from https://www.ippbm.gov.my/dokumen/DPN.pdf, 02 April 2018.

Noor Azlin, Y. (1999). *Environmental settings of three recreation forests and their effects on visitors' perception*. Unpublised PhD Thesis, Universiti Putra Malaysia.

Nur Hafizah Idris. (2014). *Foreign tourists' evaluation on attractiveness of recreational forests in Peninsular Malaysia as ecotourism destinations*. Unpublised Master Thesis, Universiti Putra Malaysia.

Qiu, L., Lindberg, S., & Nielsen, A.B. (2013). Is biodiversity attractive?—on-site perception of recreational and biodiversity values in urban green space. *Landscape and Urban Planning, 1*19 (November 2013): 136-146. https://doi.org/10.1016/j.landurbplan.2013.07.007

Rosilawati, Z., Nikmatul Adha, N., Dian Sandri, Faizah A. and Ibrahim M. (2012). Nature seekers within the urban vicinity. *Journal of Surveying, Construction & Property*. 3(2) Special Issue 2012: 1-13.

Tierney, Patrick T., Deborah J. Chavez & James D. Absher. (2008). Constraints to leisure travel and visitation to natural areas: an international comparison of four cities, pgs. 39-49. In Chavez, Deborah J., Winter, Patricia L. & Absher, James D., eds. (2008). *Recreation visitor research: studies of diversity*. Gen. Tech. Rep. PSW-GTR-210. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.

Tyrväinen L., Ojala A., Korpela K., Lanki T., Tsunetsugu Y., Kagawa T. (2014). The influence of urban green environments on stress relief measures: A field experiment. *Journal of Environmental Psychology*. 38: 1-9. DOI: 10.1016/j.jenvp.2013.12.005.

Tveit, M. & Ode Sang, A. (2014). Landscape assessment in metropolitan areas–developing a visual indicator-based approach. SPOOL, 1(1). doi:10.7480/spool.2013.1.641

University of California. (2007). F*orest stewardship series 8: forest wildlife, division of agriculture and natural resources*. California, USA.

van den Berg, A. E., Koole, S. L. 2006. New wilderness in the Netherlands: An investigation of visual preferences of nature development landscapes. *Landscape and Urban Planning,* 78: 362-372.

WWF Malaysia. (1996). *National Ecotourism Plan* (NEP). Malaysia: Petaling Jaya.