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## **DOES AGE AMONG LANDSCAPE ARCHITECT'S AFFECTS THE PERCEPTION ON LANDSCAPES OF TROPICAL RECREATIONAL FORESTS?**

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### **Abstract**

*Perception of our environment helps us to understand and react to our environment. But, in the perception process, a number of factors seem to influence perception for a landscape such as age. Therefore, this study aimed to investigate whether the age factors among landscape architect's affects for landscape perception of tropical recreational forest in Malaysia. A study was conducted in Ampang Recreational Forest, Selangor as a case study. This study using a questionnaire with photographs surrogates to gather data from 119 expert landscape architects. Results have shown that there is no statistical significant effect of age among professional landscape architects in perception for tropical recreational forest landscapes in this study. Thus, this result portrays that age of the respondent in the same group does not statistically affect landscape perception.*

### **Keywords**

Age, Perception, Landscape and Recreational forest

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### **1. Introduction**

Tropical recreational forest provides a unique landscape to be observed and explore. Their uniqueness has attracted many peoples to visit forest to enjoy the scenery and escape from hustle-bustle urban life. This site been visited by people from the age groups of

children, youngster and older. However, tropical landscapes have changed greatly in recent decades because of increasing demand for land to support agriculture and timber production, and other pressures of population and human economics. Moreover, sport recreation activities in the park were also having an environmental impact, especially to the aesthetics and crowding factors (Rahmafritria et al., 2017). Therefore, it influences the quality of landscapes and the benefits which they provide to the public. For example, it leads to the loss of natural spaces that serve the urban population for recreation. But contact with nature is a basic human need that contributes to people's well-being and quality of life and improves their health and relaxation.

Malaysia had designated parts of their forest as recreational forest since the First Malaysian Plan (Nor Azlin, 1999) and the sites has successfully become as ecotourism site now (Idris et al., 2013). Recreational forest is the area that being used for various activities such as picnic, camping, nature walks as well as for research, environmental education and conservation of flora and fauna (Mohd Kher, 2012). This site has a great interest and an attraction to local people as well as tourists for recreational and aesthetically purposes (Jamilah et al., 2007). This area also has a positive effect on tension release and psychological and physiological health (Tzoulas et al., 2007; van den Berg et al., 2007; Niemelä et al., 2010; Tyrväinen et al., 2014). In addition, the natural view like a mountain can increase the property value (Franklin & Waddell 2003). But bear in mind, uncontrolled of the development of tourism in recreational forest could causes to negative impacts such as the depletion of natural resources, socio-cultural issues, and environment (Astawa & Suardani, 2017). Therefore how people perceive recreational forest landscape as one of the natural assets need being understood. What are the factors affecting their perception need to be investigated too.

Experiencing organized and interpreted information extracted from sensations call as perception process. While, landscape perception is a combination of visual inventory, landscape experience and reaction. Landscape perception can occur through communication media such as photographs, films, paintings or texts, or through direct physical experience (Heijgen, 2013). Several factors influenced landscape perception such as individual factors, cultural factors and the physical landscape. This is because people have set up different criteria for landscapes stemming from their various experiences. A study done by Priskin's (2003) indicated that perceptions are affected by gender, age, and the visitor's level of education. Other researches have revealed the influence of personal history and culture on perception (Aoki, 1999; Jacobs, 2006; Taylor & Lennon, 2012). However, age and familiarity

are noted as being of high influence. The chronology is simple, when we are a kid, we perceive the landscape different from when we are an adult. Furthermore, age has a lot to do with life perception. For example, when a newcomer looks at old photos in the company of a long-time resident, he/she will notice that the oldster sees much more than he/she does. However, the long-time resident might have difficulties in putting his place in a wider context.

Some researchers found that preference for natural landscapes varies with age (Balling and Falk, 1982; Lyons, 1983; Strumse, 1996; van den Berg & Koole, 2006). Elderly people have been found to display relatively low preferences for wild natural landscapes and high preferences for managed natural settings. This is mayed be due to their greater physical and psychological vulnerability, which may make them more at risk from the dangers of wilderness areas (van den Berg & Koole, 2006). Children often see and interpret the environment in manner that is more detailed and personal compared to adults (Chawla, 1986; Nabhan & Trimble, 1994). Farther on, local places are especially important for children's personality, because children assign these places as a special type of their "belonging" (Mathews, 1992). Access to natural green spaces enhances the attention and cognitive functioning in children (Wells, 2000; Faber Taylor et al., 2001). Mustafa Kamal (2009) mentioned that a study by Bernaldez, Abello & Galiano in 1989 found that children of 16 years old and above tend to prefer environments that are more challenging as compared to younger children ages below 11 years old. Others researcher, such as Zube, Pitt & Evans (1983) found that young children (6-11 years old) seemed to have a different perception of the environment than adults (36-65 years old). Younger children, however, were found to be less sensitive to human presence and incompatible use of the natural environment as compared to adult subjects.

How people use and perceive landscapes and ecosystems was based on their age (Lock & Cole, 2011). It was notified that younger people without children have a tendency to be more interested in the energetic, recreational and relaxation side of landscapes than the aesthetic qualities or the calming tranquility benefits of landscape (the Futures Company, 2010). While adults recognize the sense of calm and escapism that landscapes can offer. This is probable to be related to having a hectic job or life, as well as the relationship of landscapes with childhood memories (Research Box et al., 2009; Natural England, 2010). The amount of time spent in forest and the outdoors as a child is thought to have a positive relationship with the frequency of use of such spaces as an adult (Ward-Thompson et al., 2008).

Landscape has become like one of the most significant environmental components in the quality of life (Spence, 2013). This is because a good deal of research has revealed that landscape offers numerous psychosocial functions such as it offers visual aesthetics, promote rebuilding from mental stress and rejuvenation from psychological fatigue (Howley, 2011; Kaplan, Kaplan & Ryan, 1998); improve cognitive functionality (Berman, Jonides & Kaplan, 2008); define a sense of place and local identity (Walker & Ryan, 2008); and can reduce crime and aggression in urban areas (Kuo & Sullivan, 2001). Therefore, to understand how groups shape the environment and how the environment shapes groups, we need to understand the concept of “man-environment” relationship (Zube, 1976). This is invaluable information for landscape designers, managers and policymakers in the framework design of sustainable development (Park & Selman, 2011).

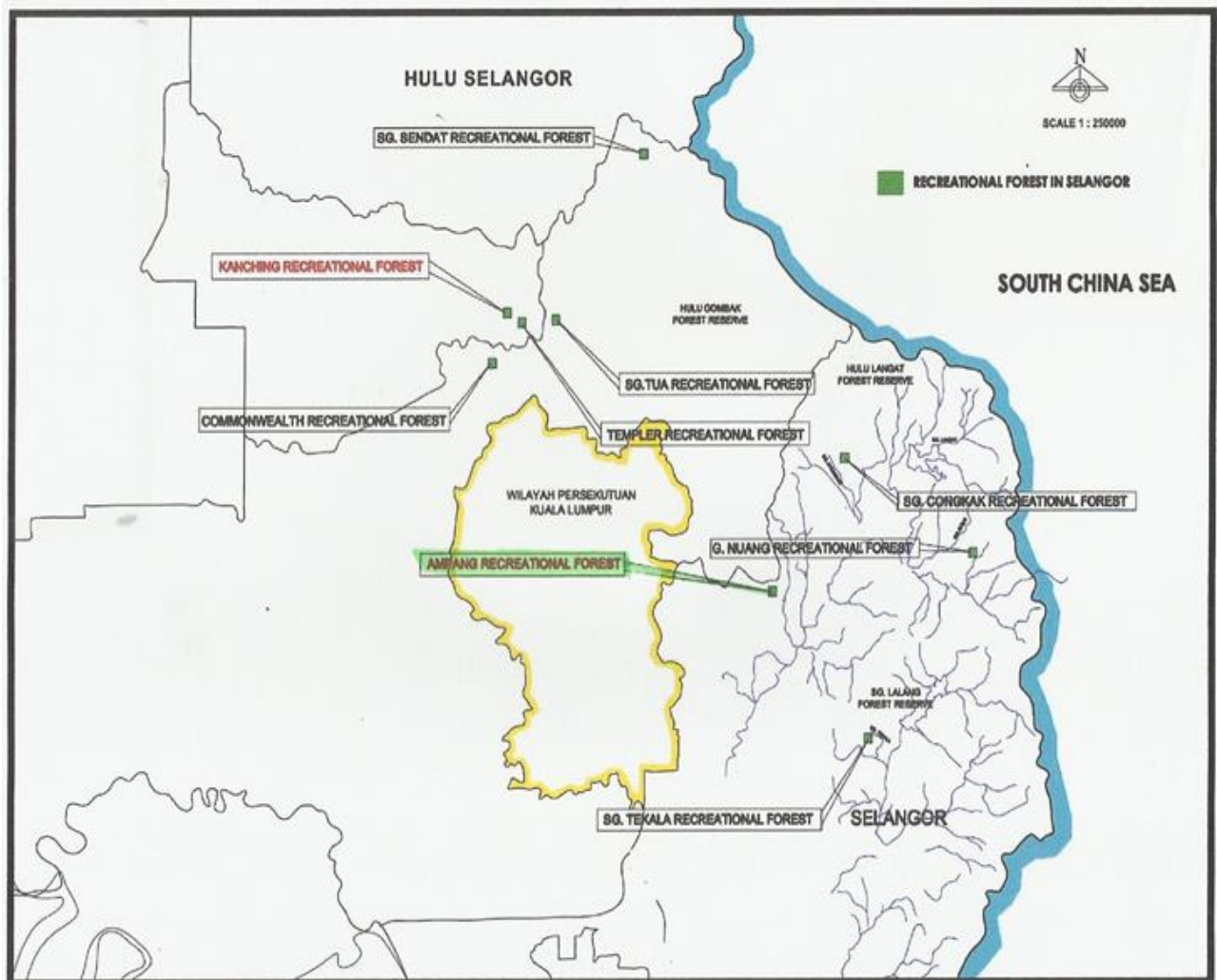
The issue was captured here where there is a lack or none of a study on age among the same group of professionals being carried out. Most of the previous studies were on different groups/category such as among the adults and children. Therefore, this study aimed to investigate whether the age factors among landscape architect's affects for landscape perception of tropical recreational forest in Malaysia. The objective is to examine whether age among the professionals in the same group really affects preferences for tropical recreational forest landscapes. Understanding the differences in terms of age among the same group of professionals could therefore guide landscape architect in creating public places for the different age levels with a pleasant surrounding or environment at recreational forest.

## **2. Methods**

A survey was conducted using photo-questionnaire with photographs as surrogates of the actual environment. Ampang Recreational Forest were selected for this study (Figure 1). This park is popular forest recreation and for outdoor activities in Selangor, Malaysia. The numbers of professional landscape architects included were 119 who made up of 12% out of 975 Institute Landscape Architect Association of Malaysia (ILAM) till 2016. They were selected randomly based on a company list of the ILAM directory. They were called and asked whether they were willing to become respondents for this survey. When they agreed, explanations were given to them personally and then the evaluation forms together with photos to evaluate were given. The respondents self-administered the evaluation process.

A set of photographs representing the variable of natural landscapes (vegetation, soil, topography/landform, geology and water), facilities (benches, toilets, wakafs, etc.) and maintenance was presented to them (Figure 2). All photographs was taken using a digital

camera with a lens set on 50 mm, horizontal view and proper angle (balance, depth, focus and panoramic). All photographs was taken at the eye level.




























**Figure 1:** Location of Ampang Recreational Forest (Source: Author 2017)

The resulting photo-collection was reviewed to remove poor quality and inappropriate photographs. There were 28 photographs chosen and used in this photo-questionnaire survey. These images depict Natural-looking Settings (13 photographs), Designs (8 photographs) and Maintenance Aspects (7 photographs). The photographs were taken from the study site during a fieldwork on existing conditions.

Landscape variables had been grouped into the five parameters in this study (Table 1). A Likert scale (5 = very good; 4 = good; 3 = normal; 2 = bad; 1 = very bad) was used to measure landscape architect perception. The evaluation forms together with the photos were collected after three days to give enough time for evaluators to do their evaluation.

The data were then analyzed using Statistical Package for Social Science (SPSS). The results are reported according to the four independent variables of Natural Landscape, Design, Maintenance and Cleanliness.

<b>1. Natural Landscape</b>				
				
Vegetation	Soil	Topography/landform	Geology	Water
<b>2. Design</b>				
				
Toilet	Playground	Shelter	Bridge	Wakaf
				
Respect to nature – scale/size	Respect to nature - location	Respect to nature – color	Respect to nature form/shape	Respect to nature - material
<b>3. Maintenance</b>				
				
Vegetation	Grill	Wakaf	Pergola	Signboard
<b>4. Cleanliness</b>				
				
The dry leaves swept	Road surface	Grass cutting	Pathway cleanliness	Water quality

**Figure 2:** Sample photographs of Ampang Recreational Forest scenes (Source: Author, 2017)

**Table 1: Landscape parameters**

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

(Source: Author, 2017)

### 3. Results and Discussion

It was reported here that this study revealed that none of the respondents rated for all the variables as “normal” thus, this value was not shown in the Tables. Demographic breakdown of the respondents in Table 2 had shown that there were more or less equal number of males (42.86%) and female (57.14%). Half (58.82%) of them fall in the age below 27 age groups, while the others are in the group of more than 40 years old (39.50%) and only two (1.68%) of them above 40 years old. Looking at the ethnic background, Malay dominated the group (82.35%) while Chinese represented 15.97% and Indian only 1.68%.

**Table 2: Respondents background**

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

(Source: Results of Primary data analysis, 2017)

An analysis had been carried out to investigate any differences between landscape architects' within different age groups in response to natural landscape perception. It was reported here that this study had shown that none of the respondents rated for all the variables as "normal" thus, this value was not shown in the Tables.

Generally, results in Table 3 had shown that age does not affect perception on natural landscape among the respondents as the p value of the variables is greater than the significance level of 0.05, except water ( $p=0.021$ ). However, waters with different features created different effects, and they got higher values in terms of visual-spatial effects and functionality criteria when assessed in terms of landscape values (Sakici 2015). This result was similar with results of Chen et al., (2016) where they revealed that personal factors (age, gender and education) did not affect the ratings of landscape photos significantly. This result also similar to previous scientific results (Green & Tunstall 1992, Marylise et al., 2013, Frank et al. 2013). Therefore, it can be says here that age do not have much influence on the landscape perception. This result confirms Foster's studies (1992) who believe that forest landscapes produce a surrounding widespread environment that does not allow the demographic characteristics of the observer to influence aesthetic perception. The Author strongly believed that in the case of this study, landscape architects age does not affect the perception because they have similar understanding on landscapes as well as they judge landscape attributes based on the same principles of art, design, resource management and ecology.

Looking at specific variables of natural landscape, results depicted in Table 1.3 showed that the age of an individual's landscape architect have statistically no effect on their perception on vegetation photos as the p value of the variables is greater than the significance level of 0.05, showing an insignificant value. This situation has similarity with a study carry out by Shirazi & Kazmi (2016) where they revealed that age have no effect on the statements of loss of vegetation cover cause of climatic change and trees are important increasing the property values in Lahore, India. While, a study done by Sop & Oldeland (2011) also found that age did not significantly affect local knowledge, whereas ethnicity did in their study on local perceptions of woody vegetation dynamics in the context of a 'greening Sahel': a case study from Burkina Faso.

This study also found that age of landscape architect does not statistically give effect on soil perception. This finding had similarity with Mukati (2016) study where he found that there is no relationship between age and perception regarding soil health in Tikamgarh district of Madhya Pradesh. Furthermore, Odendo et al., (2010) also found in their study that



age, education and extension on perception, did not significantly shape the extent of perception soil fertility degradation.

**Table 3: Age Perception on Natural Landscape**

Subject	Very Good		Good		Bad		Very bad		df	Asymp. Sig. (2-tailed) ( <i>p</i> value)
	n	%	n	%	n	%	n	%		
Vegetation									4	0.843
Ages: <27	25	21.01	43	36.13	2	1.68	0	0.00		
28-40	18	15.13	28	23.53	1	0.84	0	0.00		
>40	0	00.00	2	1.68	0	0.00	0	0.00		
Soil									6	0.557
Ages: <27	4	3.36	39	32.77	26	21.85	1	0.84		
28-40	8	6.72	23	19.33	16	13.45	0	0.00		
>40	0	0.00	1	0.84	1	0.84	0	0.00		
Topography/Landform									4	0.781
Ages: <27	10	8.40	41	34.45	19	15.97	0	0.00		
28-40	7	5.88	23	19.33	17	14.29	0	0.00		
>40	0	0.00	1	0.84	1	0.84	0	0.00		
Geology									4	0.126
Ages: <27	8	6.72	38	31.90	24	20.17	0	0.00		
28-40	5	4.20	32	26.89	10	8.40	0	0.00		
>40	0	0.00	0	0.00	2	1.68	0	0.00		
Water									6	0.021**
Ages: <27	14	11.76	30	25.21	22	18.49	4	3.36		
28-40	8	6.72	31	26.05	5	4.20	3	2.52		
>40	0	0.00	1	0.84	0	0.00	1	0.84		

Notes: \*\*Significant at the 5% level

(Source: Results of Primary data analysis, 2017)

People were most attracted to landforms filled with water and covered with vegetation (Aleš Smrekar et al., 2016) and may influence people's perception. But, a study carried out by Wang & Xu (2012) found that age, sex and education level are not given significant effect on willingness to pay value for Zhangye Danxia Landform in China. Results of this study (Table 3) also revealed that age didn't give statistically significant perception on

topography/landform. Therefore, it was believed that with no regard to age, landscape architect have same outlook towards landforms.

Geology underlies what people see on the surface of the land and always associated with rock. A rock is a natural occurring solid cohesive aggregate of one or more mineral or mineral materials. People often look at geological solely on its beauty, hence only value it based on the geometrical shape (Tanot Unjah, 2013). However, in this study age does not statistically give significant perception on geology. This show that landscape architects' age didn't affect the perception of geology at the study site due to them have a same view in landscape protection and landscape experience as they can see in the photographs.

However, looking at water Kaplan et al. (1998) claimed that people prefer waterscapes that have natural flow patterns with natural or natively vegetated borders. They further mentioned that water would generate unfavorable preference ratings when there are suspected issues of contamination (off-color, the existence of alien objects), messy or eroded edges or hard-edged solutions. The author strongly believed that the statistically significant of age factor on water perception ( $p = 0.021$ ) in this study was close related with this statement. This is because some of the respondents' see that the water has been disturbed by the East Klang Valley Expressway (EKVE) project as well as there are suspected issues of pollution were detected in the given photographs.

Age of landscape architects also was found statistically did not give perception effect on design aspects in this study (Table 4) as the  $p$  value of the variables is greater than the significance level of 0.05, showing an insignificant value. This happens because of them found that the park applied medium designs (buildings are not too huge and high) and portrays local architecture (Malay architecture). This is evidenced in the typical roof design and materials used (wood and clay bricks). The color schemes chosen are chocolate inducing "cool" and "peaceful" response in visitors as well as suitable for forest environment.

Results in Table 4 also show that the age of landscape architects in this study doesn't statistically effect on aspect of respect to nature. They found that the facilities were located at the suitable location, and no disturbance was occurred (e.g. trees cutting and hill cutting) and the design were convincing with the existing environment as can see in the photographs given.

**Table 4:** *Age Perception on Design*

Subject	Very Good		Good		Bad		Very bad		df	Asymp. Sig. (2-tailed)
	n	%	n	%	n	%	n	%		

						(p value)
Facility					6	0.474
Ages: <27	2218.49	34	13 10.69	1		
28-40	1210.08	28.5719	1411.76	0.8421.68		
>40	0 00.00	15.97	0 0.00	0 0.00		
		2 1.68				
Respect to Nature					6	0.480
Ages: <27	13 10.92	35 29.41	20 16.81	21.68		
28-40	6 5.04	26 21.85	1411.76	1 0.84		
>40	0 0.00	00.00	21.68	0 0.00		

Notes: \*\*Significant at the 5% level

(Source: Results of Primary data analysis, 2017)

Results of this study (Table 5) also revealed that age of landscape architect didn't affect statistically perception on maintenance of natural and man-made elements as well as cleanliness aspects. No differences' perception of this item due to them sees the surrounding environments in the photographs given appear to be under good maintenance that portrays the efficiency of the management. Furthermore, they share a similar perception on the importance of landscape maintenance.

**Table 5: Age Perception on Maintenance**

Subject	Very Good		Good		Bad		Very bad		df	Asymp. Sig. (2-tailed) (p value)
	n	%	n	%	n	%	n	%		
Natural Elements									6	0.379
Ages: <27	15	12.61	44		119.24		0	0.00		
28-40	11	9.24	36.9732		32.52		1	0.84		
>40	0	00.00	26.89		1 0.84		0	0.00		
			1 0.84							
Man-made Elements									6	0.450
Ages: <27	11	9.24	3831.93		2117.65		0	0.00		
28-40		54.20	26 21.85		13 10.92			32.52		
>40	0	0.00	1 0.84		1 0.84		0	0.00		
Cleanliness									6	0.743
Ages: <27		1512.61	3731.09		1714.29		1	0.84		
28-40		97.56	23 19.33		130.92			21.68		

>40	10.84	0 0.00	1 0.84	0 0.00		
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Notes: \*\*Significant at the 5% level

(Source: Results of Primary data analysis, 2017)

#### **4. Conclusion**

In this research, it was found that generally, there is no significant effect of age among professional landscape architects in perception for tropical recreational forest landscapes. In the case of water, the significant was occurred due to landscape architects has different feeling on the EKVE project that affect the water quality of Ampang Recreational Forest. Largely age does not affect the perception in this study because the respondents are in the same group which is landscape architect and they had applied a same knowledge and practice in the perception process. They also express their professionalism by putting aside their personal matters. Theoretically, landscape architect judge the landscape attributes based on the same principles of art, design, resource management and ecology that they received during their study. Thus, this result portrays that age of the respondent in the same group does not statistically affect landscape perception. However, it believed that the significant effect could be seen if the respondent is from the different group.

People give values to recreational forest landscape may include aesthetic, functional and ethical values. Aesthetic values close related to scenic quality of an area as a place for recreation and tourism. While functional values deal with activities and efforts that support the existence of the place. But ethical values contract with the right of human and other biotic components like plants and wildlife. Therefore, the disturbance that causes to the degradation of recreational forests has influence people perception in this study. Consequently, further study need to be carried out to investigate the perception differences on water element within the age among the architect landscape in this study to identify what factors has contribute to the differences. Last, but not least, this study was limited to the recreational forest landscapes that are located in the natural forest setting.

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