

Relationship of Culture and Plant Preferences among Malaysian

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ABSTRACT

Malaysia, being countries with a multiracial population is now in need of a range of information on appropriate and preferred environmental quality standards for providing both a habitable and aesthetically valued environment for its residents. The information needed should cover the diverse tastes; cultures and beliefs of the multi-racial community in order to create an environment preferred by the public that consist of different races. A study with respect to culture and plant preferences of landscape planting was carried out to compare the preferences of an urban multiracial community. There is a need to carry out such a study because urban planting in the city should reflect the multi-racial nature of society. Based on the human and plant relationship, the researcher can conclude that generally culture, experience and beliefs do play some roles in influencing one's preferences towards the plant selection. It is clear that in this study, generally all the respondents, regardless to which races they belong to, prefer landscape with plants which are properly maintained. The difference in their preference lies in terms of spatial arrangement of plants, type of plant categories (trees, shrubs and groundcovers), composition of plants and other elements such as colour, form, texture, order and plant hierarchy.

Keywords: *Preferences; plant species; culture; ethic; plant selection*

INTRODUCTION

Malaysia, being countries with a multiracial population is now in need of a range of information on appropriate and preferred environmental quality standards for providing both a habitable and aesthetically valued environment for its residents. The information needed should cover the diverse tastes; cultures and beliefs of the multi-racial community in order to create an environment preferred by the public that consist of different races. Although public awareness in environmental protection and enhancement has gained momentum, economic considerations tend to be the overriding factor in physical development undertakings. Thus, landscape consideration reflects on only some rather ad hoc efforts being undertaken to plant some trees, shrubs and groundcovers at certain spaces. This trend has continued to persist for some years in the shaping of our urban environment. The planting of plants at a designated space should be properly designed to fulfill the multi-purpose needs of the users that are to beautify the spaces, to be functional for the users and to reflect the multi-racial community of this country. A study was carried out by Mustafa (2000) to investigate the preferences of the Malays and the Chinese subjects for scenes of Malaysian rural landscapes. His study offers early understanding on the preference of different ethnic groups towards landscape in Malaysia. In his study, he concluded that the difference of landscape preference between the Malays and the Chinese could be associated with previous experience during childhood.

Plants can be considered as soft elements in the garden that give indirect values and symbolism that determined people belief, culture and function (Ismail Hafiz, 2016). The relationship of culture and plant preference is becoming an important study and significant due to increasing awareness of the public in the plant species and their usage in landscape planting. Research by Normiadilah and Noriah (2012) about the relationship of Malay plants and culture in context of ethno botany concluded that ethno-botanic plants can preserve the integrity of the cultures and at the same time protecting the natural heritage and its knowledge. The information also allows urban communities to understand the plants usage better and respect the differences in Malaysian local culture. Every ethnic or race in Malaysia practices ethno botany in its own different ways. While cultural preferences toward plant species have been long studied as food and consumption, rituals and utilities, the relationship of culture and preferences of plants in urban landscape planting has received little attention. This study aims to determine the relationship of culture and plants among Malaysian. The objectives are however, focuses on the preferences of the main races in Malaysia consisting of the Malay, Chinese and Indian towards certain species in urban landscape planting.

LITERATURE REVIEW

In Malaysia, research related to plants and culture focused mainly on outdoor spaces of house compounds. Recently, Anizah (2016) in her research stated that plants give functional values for people such as food, ornamental, aromatic, medicinal and shade. Her research also found that most of the herbs and shrubs are frequently utilised for aromatic and ornamental values, while trees and climbers providing roles in providing shade. She identified that the implementation of traditional plants, edible garden and Malay garden concept on the roof top could give strong identity and knowledge advancement in Malays landscape knowledge. In context of socio belief, to the Malays, plants are normally planted for edible purposes. Ismail Hafiz (2016) and Ismail (2002) conducted their research on plant preference in related to Malay Traditional Garden. According to them, the garden concept has resulted from the evolution of backyard garden and synchronization of outdoor space arrangement around Malay house design. In terms of plants selection, the overall design of traditional Malay garden and its feature are partly influenced garden and fruit trees, edible shrubs, herbs, flowering and fragrant planting.

Plants also play a key role in Chinese gardens. According to Yu and Chen (2007), Chinese plants have accumulated of culture meaning under the influence of Chinese traditional culture. The plants are not only physically linked, but are also mysteriously bonded and connected to Man's well-being (Ong, 1999). The function of plants in generating *shen* and *ci* and and balancing the *yin* and *yang* forces of Nature is the basic of successful Chinese garden design. Ismail (2001) studied on the ethnic gardens style and he found that the Chinese garden can be distinguished by the red colored of decorative plants such as Fortune Plant (*Adenium obesum*) and Lipstic Palm (*Cyrtostachys renda*). The red colored plants are believed to fortune to the household and fight the bad spirit from entering the house. Some of the plants are planted in dragon decorative clay pot, near to the koi find pond and water fountain that give more meaningful to the Chinese people. In terms of fruit trees, the Malaysian Chinese ethnic utilize some similar plants for provision of shade and food like same as Malays and Indian ethnic. Some researchers symbolized the meaning of plants that related with good luck motives, symbol of blessing, nobility, love and prosperity (Too, 1998). According to Chinese society, Lucky Bamboo (*Bambusa vulgaris*) is symbolic of resilience, success and strength, Jade Plant (*Crassula ovata*) that has a features like a coin shape give a prosperity meaning to the owner, Money Tree (*Pachira aquatica*) considered as luck plants because of the five lobed palmate leaves that associate with five *feng shui* elements (water, earth, fire, wood and metal) and citrus and lime for good health, wealth and longevity (Ong, 1999).

The Indians show strong preference in plants especially cultivated in their house compound. According to Ismail (2001), in Indian's edible garden, species such as kacang kelo (*Moringa ptego-perma*), Krishna tulsi (*Ocimum santum*), Jasmin (*Jasminum sambac*) and susun kelapa (*Ervatamia coronaria*) function as culinary, medicine and payer purposes. Fruit trees are also categorized in Indian garden. The tree supplies fruit as food and leaves for ritual and religious purposes. As for example, the banana trees are planted for their fruit and the leaves are used for wrapping food, platter to serve rice and curry. The banana trees are also used during wedding ceremony where the fruit will be tied at the

gatepost of the bridegroom house and temple gate as a symbol of prosperity and fertility (Ismail, 2001). The Indian believes that some plant species could cast away the bad spirits from entering their house such as fresh mango leaves are tied in string and attached at doorframe. Examples of plant species that to be used during ritual ceremony at the temple are jasmine flowers and coconut fruit. Hull and Revell (1989) in their "Case Study in Bali" stated two points that could go against a 'genetic seed' answer on how to determine aesthetic beauty in landscapes. The first point is that landscape preference is a learned value, although the usage of 'scenic beauty' may be a culture specific term, it is not used the same way across the culture. The second point is that preference is dependent on expectations and information which is also related to experiences. This includes religious influences and purpose. In their study, they also notice that there are similar responses, but these responses are based on different cultural reasoning. Finally, from this study they have concluded that culture does play a role in preferences of landscape aesthetics. However, Hull and Revell (1989) noted that natural scenes with open lush and green landscapes are chosen by the subjects, which is an evidence that points toward a genetic preference. Thus, there is a possibility that both biological and the cultural factors influence landscape preference. Cultural explanations could be used to explain, for instance, why the French may tend to like topiary, or why many Americans apparently prefer foundation plantings in their front yards (Ulrich and Parson, 1990). Study by Fraser and Kenney (2000), on factors that affect perception of urban forest yielded very interesting results. The results showed that there were differences in preferences among the British, Italian, Portuguese and Chinese in terms of planting trees. The British had reacted most positively to shade trees and ornamental trees. They also expressed the greatest need to plant shade trees and had the most shade trees planted on their properties. The Italian community followed by the Portuguese, emphasized on fruit trees and vegetables and responded negatively towards shade trees because they would cause conflict with their gardens. The Chinese community planted least number of trees and showed less yard maintenance than the other communities. The lack of trees in the Chinese gardens was mentioned by Titley and Wood (1991). They explain that water, stone, and buildings are the critical elements of the Chinese gardens and a highly influential style. One of the issues that was highlighted by Fraser and Kenney (2000) regarding Chinese landscape is that the Chinese gardens are abstract and do not stress vegetation. Hence, cultural and other learning-based perspectives can suggest at least partial explanations for a given society's positive disposition to vegetation generally, and for greater liking for one particular plant variety over another. The great diversity of tree species and varieties mirrors ethnic and cultural diversity in its differences in appearance, customs and traditions (Dwyer et al. 1991).

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RESEARCH METHODOLOGY

The methodology applied in this research was based upon the standard procedures of scientific research to ensure the validity and the reliability of the results. The usage of photographs as a surrogate for preference rating of landscape planting was adopted from previous research. Although there are limitations when applying this method, the researcher feels that this is the best way to explore and to collect as much information from the public within the stipulated time and cost.

Quantitative and qualitative approaches were adopted for data collection. The quantitative research approach refers to systematic empirical investigation of social phenomena through statistical computation techniques. The qualitative approach to research is focused on understanding a phenomenon from a closer perspective. Shah Alam township was chosen for this study. To exploit both approaches, interviews were carried out.

Quantitative Approach

By answering part A and part B of the questionnaire, quantitative method was fulfilled. On the other hand, by answering part C of the questionnaire that consists of open-ended questions, the qualitative method was utilized. These methods will complement each other in validating the data, thus providing triangulation in the methodology. Section A consists of the demographic background of the respondents while section B covers the preference rating of photos by the respondents which may serve as an effective participation tool to identify differences among interest groups. Section C includes the reasons for liking and disliking the plant composition of each category. The open-ended verbal response is useful in acquiring qualitative data. Each respondent was briefed verbally on the purpose of the study. Only voluntary respondents were chosen to determine the effectiveness of the study. They were shown 44 photographs that were arranged randomly and were told by the enumerators to rate them based on the planting rather than the structures. Three a priori categories of landscape planting consisting of open space planting and planting near buildings were chosen. They were preceded by one practice photograph and followed by one filler photo. The respondents were not told that the last photograph was the filler in order to avoid end-of task anticipation effects (Herzog et al., 2000). Kaplan and Kaplan (1989) introduced Category Identifying Methodology (CIM) as a method to extract the perceptual categories underlying preferences. It involves factor analysis to discern the underlying people's perception of rated scenes based on photographs or slides.

Qualitative Approach

On completing the rating task, each respondent was asked to choose two photographs for each category i.e. one photograph they liked most and one photograph they liked the least and to give reasons for their preference. The respondent was reminded to give short answers to eliminate boredom when answering the open-ended questions. Additional questions were registered to the respondents and these questions focused on whether cultures (belief and myth) influenced their choice of plant selection. The respondents were also asked whether they would like to suggest other plants in the area and to name the type of plants they preferred in that particular area. From the suggestions given by the respondents, the researcher would be able to indicate whether they have some knowledge on plants and the type of plants preferred by them. The content analysis was carried out based on those responses. Keywords that described reasons and suggestions were listed and the frequent use of each keyword was counted. These keywords were grouped into general categories based on closely related meanings. Each general category was ranked according to its percentage and comparisons were made as to the total number of keywords in all categories.

RESULT AND DISCUSSION

Quantitative Data Analysis

Frequency of Respondents based on Races

The total number of the members of the public who participated in the study is presented in Table 1. From 487 respondents, 72.3% were Malays, 13.6% were Chinese and 14.2% were Indians. This frequency truly reflects the overall population of Shah Alam where the Malays constitute about 70% of the population.

Table 1: Frequency of Respondents based on Races

Races	Frequency	Percent (%)
Malay	352	72.3
Chinese	66	13.6
Indian	69	14.2
Total	487	100.0

Source: (Authors, 2016)

Mean Comparison between Groups and the Perceptual Categories

Results on the factor analysis showed that there were seven factors for open space planting and six factors for planting near buildings. The mean rating of the underlying perceptual categories by different groups is shown in Table 2. Generally, the Malays rated the factors lower than the other groups in factor A (category open space planting) except for factor 2a (playground areas surrounded by mature trees). The pattern continued for factor B that showed mean ratings were lower for factors 1b and 4b. The Chinese rated factor 1a higher than the Malays and the Indian. The most visually preferred landscapes were those in which trees are plentiful and which determine their character while the least preferred landscapes were when the existence of trees is almost minimal to non-existent. This is clearly shown in factor 1a (playground area lacking mature trees) and factor 5a (sitting area surrounded by some trees). Lack of shades was the main reason why the respondents rated the scenes lower. This is especially so among the Malays and the Indians. As expected, mystery has been implicated as a positive contributor to environmental preference. In this study, factor 6a (planting that creates mystery) was rated high. Research by Shahhoseini et al., (2015) indicated that mystery, as an indicator of having winding shapes of paths and expansive body of trees, was the most preferred spatial configuration of space.

Among the six underlying perceptual categories, the highest ratings were for planting near the buildings dominated by palm species (factor 2b) and attractive planting in the planter box beside the buildings (factor 5b). The existence of these palm species near the buildings in both factors received positive ratings by the respondents. Although the palms were not matured, they fulfilled the function to enhance the attractiveness of the buildings and by organizing the palms in a straight line; they showed direction to the users. The researcher feels that coherence plays a role in increasing the rating preference of factor 2b. Coherence is one of the variables in Kaplans' informational category that helps in providing a sense of order and directing attention (Kaplan and Kaplan, 1989). Clear direction by the planting pattern provided by the palms could be associated with coherence and apparently, the respondents rated these scenes higher. Factor 5b (attractive planting in the planter box besides the buildings) showed that both the palms and the accessory vegetation were well placed and managed to create distinct visual patterns. Besides having palms in both scenes, the existence of the red colour contributed to the reason why the two scenes were grouped together. Although some Chinese respondents mentioned the importance of colours in plant characteristics, especially the red colour, the Malays rated these scenes higher, followed by the Indians and the Chinese. The researcher assumes that to the Malays and the Indians, bright colours such as red tend to be more noticeable compared to other colours and hence these scenes were evaluated higher. However, the Chinese feel that shades of bright colour symbolized good fortunes (Too, 2002), thus the existence of the Red Palm (*Cyrtostachys lakka*) increased the preference of the Chinese towards this form of planting (Ismail, 2001). Generally, the existence of plants is known to increase visual quality. Nevertheless, if the plants are not properly taken care of, the visual quality will deteriorate. As illustrated in factor 3b (planting near retaining wall and lack of maintenance), the plant composition looked messy and the maintenance was poor due to some dead shrubs along the retaining wall. Two groups from the public i.e. the Malays and the Chinese rated these scenes lower than average. However, these results contradicted the ratings by the Indians. A higher preference rating by the Indians i.e. above average could be related to other visual factors such as colours or textures of foliage. The findings indicated that there were similarities and differences in preferences for the landscape planting among the races depending on the stimuli/scenes shown to them.

Table 2: Mean ¹ Comparison of Underlying Perceptual Categories between Groups

Group Ethnic Factor		Public		
		Malay (N=352)	Chinese (N=66)	Indian (N=69)
Factor 1a	Playground areas lacking in mature trees.	2.72	3.14	2.77
Factor 2a	Playground areas surrounded by mature trees.	3.10	2.92	3.04
Factor 3a	Plants planted in rows.	2.81	3.05	3.04
Factor 4a	Parking space with shade trees.	3.06	3.13	3.08
Factor 5a	Sitting area surrounded by some trees.	2.93	2.99	3.04
Factor 6a	Planting that creates mystery.	3.43	3.51	3.49
Factor 7a	Scenes with trees in the background.	2.96	3.09	3.04
Factor 1b	Varieties of species surrounding the buildings.	3.11	3.26	3.20
Factor 2b	Planting near buildings dominated by palm species	3.64	3.74	3.54
Factor 3b	Planting near retaining walls and lacking of maintenance.	2.99	2.83	3.18
Factor 4b	Unattractive planting in the planter box beside the buildings.	2.71	2.90	2.80
Factor 5b	Attractive planting in the planter box beside the buildings.	3.64	3.28	3.49
Factor 6b	Planting at the entrance of Shah Alam City Council	3.15	3.02	3.33

Source: (Authors, 2016)

Notes:

1. Preference rating scale is 1= strongly dislike, 2=dislike, 3=medium, 4=like, 5=strongly like.
2. Factor 1a – 7a is under the category of open space planting.
3. Factor 1b – 6b is under the category of planting near buildings.

Qualitative Data Analysis

Content Analysis on Landscape Planting Preference (Malays)

Results of content analysis of the descriptive responses by the Malays for preferred scenes of landscape planting indicate that the terminology used to describe their reasons for preference are related with the usage of space and design (Table 5.3). The terminologies that were mentioned frequently were natural (16.8%), tropical (15.5%), functional (12.9%), variation of plant species (11.6%), harmony (10.3%), proportionate to scale (10.3%), balance (7.7%), depth (5.2%), uniform (3.8%) and rhythm (3.2%). Other words that were mentioned were horizontal line (1.3%) and vertical line (1.3%). Through observation of the photographs, the researcher felt that, scenes that were most favoured by the respondents, were those that had a natural look and tropical approach in the planting design. Selection of plant species such as Coconut Trees (*Cocos nucifera*) and White Lily (*Hymenocaulis carribea*) would

enhance the tropical effect. The plant species in the photos blended perfectly with the environment, thus creating a sense of belonging to the surrounding.

When asked whether the photographs they had chosen were associated with culture or belief, 32% (8) of the respondents answered yes. The results revealed some very profound comments from the Malays as stated below.

1. "Coconut tree is a tropical species and it depicts a symbolism of the Malay world and the Malaysian surrounding."

2. "The coconut trees depict a Malay kampong which reflects Shah Alam's identity as a Malay town. The fronds of the coconut trees create a sense of welcoming."

3. "Tree lines and plants on slope attracted me. The tree form reinforced the walkway."

4. "Matured trees as a backdrop and shrubs and groundcovers in the foreground attract me. The ecotone concept brings a wildlife character."

5. "The texture of the Casuarina trees creates a unique image to users."

6. "Looking at these trees planted in this manner has evoked memories of past history."

7. "Beringin (*Ficus benjamina*) tends to be associated with spirits."

8. "Vertical lines create a pleasant view and a sense of direction. The plants do not block the background and are well maintained."

9. "They (those people who are involved with plant maintenance) have allowed, mercifully, the trees to grow naturally."

Results on the descriptive content analysis of the least preferred photographs for landscape planting revealed that the keywords that were frequently mentioned were lack of trees (18.9%), lack of maintenance (15.8%), sparse (11.4%), unnatural (11.4%), unsuitable (10.1%), plants look unhealthy (7.5%), monotonous (6.4%), boring (6.4%), no sense of scale (3.8%), no unity (3.2%), unsafe (3.2%) and not functional (1.9%). Below were some of the comments made by the respondents in response to questions on reasons for disliking the landscape planting in the photographs.

1. "No specific purpose of planting on a large space makes you feel lost and unwanted or uninvited."

2. "Show mercy to these plants. They are supposed to be there to help but not to displace the space!"

3. "There is no character to the surrounding thus evoking the feeling of placelessness."

4. "The environment looks monotonous, no variation in planting, thus adding boredom to the place."

5. "Trees are meant to be round, not square! It's simply unnatural."

6. "The trees are barely alive."

7. "The existence of the trees is not felt."

8. "No attraction in terms of design. No colour and variety of planting species; overall it looks dull."

Content Analysis on Landscape Planting Preference (Chinese)

The keywords mentioned many times when asked about the reasons for liking those photographs were beautiful (26.9%), attractive (23.3%), well maintained (20.2%) and shady (13.5%). Words like beautiful" and "attractive" were spontaneous responses that generally described the preferred scenes by the respondents. Other frequent words were relaxing (9.3%), colourful (9.3%) and natural (1.6%). Some of the comments by the respondents regarding reasons for preference were:

1. "The fan shaped fronds and their silvery hue attract me."

2. "I like the photograph due to simple lines in the planting. No shrubs to distract the line."

3. "The choice of plants in the photograph reminds me of other countries."

4. "I like the shape of the plants. They are properly pruned and the element of water at the background enhances the surrounding."

The most frequent keywords mentioned by the Chinese to explain reasons for not liking the photos were not beautiful (31.2%), not attractive (27.9%), no maintenance (22.1%), not organized (9.7%) and not colourful (9.1%).

Content Analysis on Landscape Planting Preference (Indian)

In scenes that were most preferred, words that were frequently mentioned are shown in Table 35. The keywords were attractive (25.2%), well maintained (20.7%), variation (16.9%), green (11.6%), shady (11.2%), orderly (7.9%), and safety (6.6%). When questioned on the influence of culture in plant selection, one of the respondents stated:

1. “Yes, the Hindu (Tamil) culture strongly believes in nature.”

The keywords mentioned frequently in expressing their opinions when looking at least preferred photographs were unattractive (29.5%), messy (27.2%), not colourful (15.2%), lack of trees (14.7%), boring (7.83%) and unsafe (5.55%). Generally, the comments by the Indians regarding the least preferred photographs were almost similar with the other ethnic groups of the public.

CONCLUSION

Based on the discussion above, some consistent patterns in people’s responses were found and those findings would add significant information to the knowledge on landscape planting preferences. However, by analyzing the comments by the respondents, some psychological ties between people and plants can be understood but they cannot be conveyed in a mathematical analysis. The researcher can conclude that generally culture, experience and beliefs do play some roles in influencing one’s preferences towards the plant selection. It is clear that in this study, generally all the respondents, regardless to which races they belong to, prefer landscape with plants which are properly maintained. The difference in their preference lies in terms of spatial arrangement of plants, type of plant categories (trees, shrubs and groundcovers), composition of plants and other elements such as colour, form, texture, order and plant hierarchy.

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