PUBLIC PERCEPTION ON LANDSCAPE DESIGN TOWARDS PROPERTY VALUES OF HIGH RISE RESIDENTIAL DEVELOPMENT IN KUALA LUMPUR

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ABSTRACT

Due to the scarcity of land and high land value, high rise residential are becoming a popular type of property development in Kuala Lumpur. The study investigates public perception on landscape design towards property values of high rise residential in Kuala Lumpur. It is typical in current developments that landscape infrastructure is a selling point and prominent feature. However it is vague as to whether this helps to increase the property value. Potential buyers may possibly place differential preference towards properties with landscape infrastructure should it provide benefits towards increasing the property value. The research addresses whether buyers place preference towards landscape infrastructure as a factor that would offer benefit towards increasing their property value. Proof is needed that the contribution of landscape design helps in increasing property value. A further research needs to be done in order to meet the demand and supply in landscape industry.

Keywords: *Perception, Landscape, Property, High Rise Residential*

1. INTRODUCTION

Due to the scarcity of land and high land value, high rise residential buildings are becoming popular type of property development in Kuala Lumpur. This has resulted in a phenomenon of vertical living as the most common style of living in Kuala Lumpur. These facilities at common areas are shares between the residents. It is typical in current developments that landscape infrastructure is a selling point and prominent feature. However it is vague as to whether this helps to increase the property value. Potential buyers may possibly place differential preference towards properties with landscape infrastructure should it provide benefits towards increasing the property value. Thus, proof is needed that the contribution of landscape design and infrastructure actually helps in increasing property value. Understanding these issues will help designers to understand and provide landscape design that not only satisfy the buyers' basic needs but also contribute in increasing the future values of the property.

Real estate values provide an excellent surrogate for valuing landscape quality in monetary terms. A review is provided of studies into the effect of landscape upon house values. House values and the effect of landscape views upon them will reflect the laws of demand and supply prevailing at the particular location. Focusing on a world class living environment, a good quality residential area can be highlighted as an important issue in creating a sustainable living environment. However, limited green spaces within the proximity of residential properties are not supporting the landscape space and are not conducive to living space. This is to investigate the impact of landscape design on house prices and values in residential development particularly in urban areas.

Park and landscaping has become a prominent feature in the planning of residential area (Farah, Noriah, Hadi and Ting 2010). Research conducted by Anderson and Cordell (1988) and Morancho (2003) indicate that the relationship between green areas (open spaces) and house price do exist. They conclude that house price was influenced by the availability of green areas (open spaces) and other amenities and infrastructures.

Nowadays, there is a particular concern on the urgent need for open spaces within the urban fabric as it provides significant services to the environmental quality of the areas. The research problem addresses the impact of landscape design towards property values of high rise residential development in Kuala Lumpur, Malaysia. In relation to the economic growth of the nation, it is considerably noticeable that currently there is an increasing trend in the Malaysian housing price. However, there are not many studies undertaken to investigate the relationship between the provision of landscape design and house prices (high rise development) in the Malaysian context.

As such, this research attempts to study and examine the relationship between landscape design and house prices in Kuala Lumpur. This leads to the objectives which are: (1) to identify the common factors that influence property value; (2) to identify the landscape design elements and characteristics that influence property value. The study employed quantitative approach which is structured close-ended questions in questionnaires survey.

2. LITERATURE REVIEW

This research uses working documents from the subjects of open space and house price as evidential materials. In this regard, the literature review is considered as part of the document analysis. It plays an important role as it provides background information that provides a link with the analysis stage. A wide range of documents such as planning guidelines, government reports, plans, and journals related to open space and house price were referred to, such as the planning guidelines for recreational and open space (Department of Town and Country Planning, 2005). Other essential sources include the Property Market published by Valuation and Property Services Department (JPPH) under Malaysian Ministry of Finance and both the online and offline house for sale advertisements.

2.1 High Rise Residential Development in Malaysia

High-rise buildings are becoming a trend today mainly due to the shortage of land particularly in rapid developing countries. As Kuala Lumpur is the city centre of Malaysia, there is a high living density and this leads to a shortage of choice for the public in choosing a type of residence. According to the property expert, the average occupancy of high-rise residential property in Kuala Lumpur for 2014 was 69%. With more newly completed of high-rise residential developments in 2015, this will definitely lower the rental yield as well as the average occupancy rate. In fact rental would come down, benefitting tenants.

2.2 Landscape Design in High Rise Residential

The creation of landscape spaces in high-rise buildings today is not only for reducing building heat but to provide views and psychological get-away spaces for its occupants. Basically, there are two main elements in landscape designs which are softscape and hardscape. Softscape refers to planting (trees, palms, shrubs, groundcovers, grass and etc.) Hardscape refers to the man-made element (gazebo, benches, water features, pergola and etc.) Usually, hardscape employed in an ealier stage of landscaping in order to get the form and space for softscape later on (Fitrinadia, Ramzi, Izawati, Nurbazliah, 2014). Sky Rise greeneries such as rooftop gardens and sky gardens then emerge to provide an ultimate solution of co-existence between building and vegetation within the same domain. Organic treatment of high-rise housing and sky-garden development encourages vertical propagation of greening which adds green space without taking up extra space on ground level while land is often scarcely supplied in these densely populated areas. Such provision also affords much-needed spaces for outdoor recreation and offers accessible alternatives to those who do not live near traditional parks. Sky Rise greeneries such as rooftop gardens, green space on decking over roads and canals and greening at the facade of the buildings have thus flourished in many densely populated countries and cities There are many benefits on other aspects such as economic which includes more usable spaces and increase in property value; social which includes fostering community interaction, facilitating recreational and leisure activities and also aesthetic benefit which gives visual relief and interest.

A research regarding how does environmental amenity influence property values by Abdul Hamid Mar Iman and Tan Yu Tian in 2013 was addressed that view impact was the most important aspect of environmental amenity that influences house prices in the study area compared to price, open title holding, design and condition of building and etc. Continuous variables are often analyzed in research, Mohd Ramzi Mohd Hussain, Izawati Tukiman, Ismawi Hj. Zen and Fitrynadia Mohd Shahli was studied the impact of landscape design on house prices and values in residential development in urban areas in 2014. Result show that landscape design influence the house prices and values in residential development. Most of the respondents support the importance of

landscape design positively in their residential areas. However, there are still many constraints and limitations in terms of planning and guidelines in order to utilize this landscape design especially in house compounds.

From the landscape design viewpoint, integrating strategic planting to in can gain both ecological and aesthetic benefits. Different greening layers are introduced to enable more options for residents to have direct contact with the outside environment. They also provide additional habitats for birds in the city or even find refuge for rare plants and species. Besides, integration of landscape design in the high-rise housing will help to give a sense of relief to the higher density high-rise housing environment.

Basic Guideline and Requirement of High Rise Residential in Kuala Lumpur

Within the context of urban planning implementation policies, the issue of provision of green areas is normally associated with: the requirement mentioned in any proposal plan or development plan; and State Planning Authority should reserve the green areas as part of open spaces under section 62 and 204D, National Land Code 1956, i.e. common planning practice requires a 10% of the total development areas. In general, the current practice shows that the Federal Department of Town and Country Planning (FDTCP) have set a policy of 10 percent for open spaces for each development application. However, the 10 percent policy is merely a base reference only. According to DBKL, the landscape should comply 10 percent green at ground level and 16 percent green at podium level. This requirement has to comply during Development Order (DO) submission stage.

2.3 High Rise Residential Property Value in Kuala Lumpur

The housing landscape design and values are related each other when people appreciate the values that have it landscape design and willing to pay for it (Fitrinadia, Ramzi, Izawati, Nurbazliah, 2014). According to global property guide, house prices in Malaysia continue to rise, but at a slower pace, and transactions are slightly down and residential construction activity is slowing. Malaysia's average house price stood at MYR312,050 (US$72,519) in Q3 2015, up by 5.41% (2.72% inflation-adjusted) from a year earlier.

By property type:

- Terraced house average prices rose by 5.4% (2.7% inflation-adjusted) to MYR278,223 (US$64,658) during the year to Q3 2015
- High-rise residential properties' average price rose by 6% (3.3% inflation-adjusted) y-o-y to MYR296,826 (US$68,981)
- Detached house average prices rose by 4.1% (1.4% inflation-adjusted) y-o-y to MYR524,260 (US$121,835)
- Semi-detached house average prices increased 6% (3.3% inflation-adjusted) y-o-y to MYR469,823 (US$109,185)

Kuala Lumpur has the most expensive housing in Malaysia, with an average price of MYR718,755 (US$167,035) in Q3 2015.

Role of Common Spaces in High Density Living Environment

Public spaces no longer need to be on the ground level as the population increases and the need for a larger spot of land contest the ground open space that merges with the built space and re-appears inside the building structure. Public spaces can be both participatory social spaces for retreat as well as locations of visual retreat. Historically, a public space is the type of space that is open for all people to access and carry out various activities. Spaces for public assembly, for art, and for athletic, spiritual and political engagement have existed since the ancient times. These public or common spaces were designed to incorporate more communal gatherings and facilities. A more sustainable lifestyle and land use for increased social integration have led to an increased development of landscape in high rise residential development. The elevation of public spaces has highlighted that vertical connections and planning for access to and from the ground are central in design investigation and analysis in the future. Elevated spaces have been described in both positive and negative contexts.

There are number of research about the landscape influence in property industry. In literature, a park serves as an important function in creating a sense of neighbourliness in residential area and positive impact to the value of a residential property based on research of the important of park to residential property buyers by Farawaheeda Shukur, Noriah Othman, Abdul Hadi Nawawi and Ting Kien Hwa in 2010.

However, there is also study show that the relationship between open space and house price is rather weak and not significant. Based on research by M. Zainora Asmawi, Norzailawati Mohd Noor, Mohd Nasrul Hanis Manzahari and Alias Abdullah in 2014 about the relationship between open spaces and house prices in selected townships in Kuala Lumpur, the finding may reflect the local context of Malaysian community did not regard the importance of open space in contributing to the house price even though experiences from other international cities recorded that the relationship could be considered as strong.

Based on the above literature review, it can be concluded that landscape play role in high rise residential in Kuala Lumpur. Local authority is making effort of enforcing 10 percent open space policy as well as the developer who also putting effort by introducing more landscape area at high rise building.

3. METHOD

ThThis research applied quantitative approach which includes gathering the relevant data for data processing and data analysis. Questionnaires survey was applied in the study. In obtaining the main primary data, the main source of information were respondents who are working in Kuala Lumpur because they have a major role in addressing the current issues pertaining to the relationship between landscape design and property value. The targeted total respondents are 50 due to time limitation. The questionnaire form used structured and close-ended questions. It included two sections: scenarios and respondents profiles. Therefore, the targeted population selected encompassed of those reside in Kuala Lumpur area. There are twelve (12) variables which are price, location, built up area, freehold tenure, gated or guarded community, facility, landscape, developer reputation, structure age, building style and branding to be measured.

4. RESULTS

4.14.1 Respondent's demographic and background

The survey obtained information on the demographic characteristic of the respondents. A total of 50 respondents responded to the face to face-to-face survey which represented a 100% response rate. From total of 50 respondents (n=50), 54% of respondents were female while 46% of the respondents were male. The distribution of respondents according to gender was almost equal. The age group of the respondents were mainly from the age group between 20-30 which were 46%, followed by age 31-40 (30%), age 41-50 (14%) and age 51-60 (10%). The findings indicated the respondents were mainly Chinese (58%) while Malay (36%) and Indian (6%). Their religion indicated Buddhist (44%), Islam (36%), Christian (12%), Hindu (6%) and others (2%). Majority of the respondents represented high percentage 86% in private sector and low percentage 14% in public sector. Total percentage of 44% indicated respondents that have no property, followed 38% who has one (1) property, 6% who has two (2) properties and 10% who has more than three (3) properties. According to the major age group that between 20-30 years old, which could explain the high number of respondents that has zero property. From the group of respondents who has own property, the types of property indicated terrace house (28%), condominium (24%), flat or apartment (16%), semi-detached (8%), town house and bungalow house (4%). Majority respondents have high number of tertiary education which are bachelor (64%), certificate or diploma (22%), (master (10%). However there were 4% of respondents who have completed secondary school. Majority of respondents (32%) earned between RM4000-RM5000, 26% earned between RM3000-RM4000, 20% earned RM5000-RM10000, 14% earned RM2000-RM3000 and 8% earned RM10000 and above. Table 1 shows the summary of the demographic analysis.

Table I Respondent's demographic analysis

Characteristics	% of Respondents (n=50)
Gender	
Male	46
Female	54
Age	
20-30	46
31-40	30
41-50	14
51-60	10
Ethnic	
Chinese	58
Malay	36
Indian	6
Religion	
Buddhist	44
Islam	36
Hindu	6
Others	2
Working Sector	
Private	86
Government	14
Unemployment	
Total Number of Property	
0	44
1	38
2	6
More than 3	10
Types of Own Property	
terrace house	28
condominium	24
flat or apartment	16
semi-detached	8
town house	4
bungalow	4
Highest Completed Education	
No formal education	
Primary School	
Secondary School	4
Certificate or Diploma	22
Bachelor	64
Master	10
Phd	
Range of Income	
RM1000-2000	14
RM2000-3000	26
RM3000-4000	32
RM4000-5000	20
RM5000-10000	8
Above RM10000	

4.2 Respondent's perception on major factor on purchasing a high rise residential unit

Referring to Table 2, price (mean=4.44) were rated highest value of mean or very important by respondents. The rating scale is 1=not important, 2=slightly not important, 3=moderate important, 4=important, 5=highly important. The results show that Location (mean=4.28) and built up area (4.06) were rated important. Followed by freehold tenure (mean=3.76), gated or gated community (mean=3.72), facility (mean=3.56), landscape (mean=3.48), developer reputation (mean=3.24), structure age (mean=3.22) and building style (mean=3.06). It was found that branding (mean=2.64) as the most not important factor in purchasing a high rise unit.

Table 2 Ranking of the Factors Variables

Variables	Mean
Price	4.44
Location	4.28
Built up area	4.06
Freehold tenure	3.76
Gated/ Guarded Community	3.72
Facility	3.56
Landscape	3.48
Developer Reputation	3.24
Structure Age	3.22
Building Style	3.06
Branding	2.64

4.3 Respondent's perception on landscape element that will increase property value

Table 3 shows the mean results of hardscape element variable. As shown in table below, swimming pool (mean=4.06) were rated highest value of mean or highly agree by respondents. Followed by children pool (mean=3.84), welcoming entrance signage (mean=3.64) and custom-made playground (mean=3.62). It was found that outdoor gym, pavilion and decorative outdoor lighting have the same mean value which was 3.60. Followed by water feature or water fountain (mean=3.56), BBQ pits (mean=3.48), par course (mean=3.44), reflective pool and rubberized jogging track (mean=3.42), pergola (mean=3.38), sculpture (mean=3.28) and fish pond (mean=3.0). The finding show that the pre-fabricated playground (mean=2.90) was the lowest mean or highly disagree hardscape element by respondents.

Table 3 Mean Results of Hardscape Variables Landscape Element Ranking

Hardscape	Mean	Softscape	Mean
Swimming pool	4.06	Vertical Green Wall	3.60
Children pool	3.84	Open Lawn	3.52
Welcoming Entrance Signage	3.64	Flowering Plant Species	3.44
Custom-Made Playground	3.62	Colorful Plant Species	3.44
Outdoor Gym	3.60	Fragrance Plant Species	3.38
Pavilion	3.60	Fruit Trees	3.26
Decorative Outdoor Lighting	3.60	Exotic Plant Species	3.18
Water Feature/ Fountain	3.56	Urban Farming Plot	3.10
BBQ Pits	3.48	Native Plant Species	2.92
Jacuzzi	3.44		
Par Course	3.44		
Rubberized Jogging Track	3.42		
Pergola	3.38		
Sculptures	3.28		
Fish Pond	3.00		
Pre-Fabricated Playground	2.90		
Total Hardscape Mean Value	**3.48**	**Total Softscape Mean Value**	**3.32**

Table 4 show the mean results for the softscape variable. The agreement rating scale is 1=highly disagree, 2=disagree, 3=moderate, 4=agree, 5=highly agree. The result indicate the respondents generally perceived the softscape variable less important than hardscape. The highest mean was vertical green wall (mean=3.60), followed by open lawn (mean=3.52). It was found that flowering and colourful plant species have the same mean value at 3.44. Followed by fragrance plant species (mean=3.38), fruit tree (mean=3.26) and exotic plant (mean=3.18). Native plant species as the lowest mean value at 2.92.

Table 4 Respondent's perception on landscape element that will increase property value

Hardscape			Softscape		
Functional Value	Welcoming Entrance Signage	3.64	Aesthetic Value	Vertical Green Wall	3.60
	Pavilion	3.60		Flowering Plant Species	3.44
	Decorative Outdoor Lighting	3.60		Colorful Plant Species	3.44
	Pergola	3.38		Exotic Plant Species	3.18
				Native Plant Species	2.92
	Total Mean Value	3.55		Total Mean Value	3.32
Recreation Value	Swimming pool	4.06	Functional Value	Open Lawn	3.52
	Children pool	3.84		Fragrance Plant Species	3.38
	Custom-Made Playground	3.62		Fruit Trees	3.26
	Outdoor Gym	3.60		Urban Farming Plot	3.10
	BBQ Pits	3.48		Total Mean Value	3.32
	Jacuzzi	3.44			
	Par Course	3.44			
	Rubberized Jogging Track	3.42			
	Pre-Fabricated Playground	2.90			
	Total Mean Value	3.53			
Aesthetic Value	Water Feature/ Fountain	3.56			
	Reflective pool	3.42			
	Sculptures	3.28			
	Fish Pond	3.00			
	Total Mean Value	3.32			

4.4 Respondent's valuation on landscape

The respondents were given a scenario that the point of view of potential buyer for the money value for landscape implementation based on RM500k unit. The results indicate that the 40% of respondent in opinion that RM5k, followed by 38% of 5% RM25k. For the category of RM75k and RM100k, results shows that 8% of respondent have the same thought. Whereas, it was only 4% and 2% of respondents valued more that RM100k and RM75k for the landscape implementation. Table 6 show that the percentage of willingness to pay for landscape maintenance which was 1000sft. The finding shows that majority 46% respondents willing to pay 20 cent. Followed by the category of 10 cents (36%), 30 cents (12%), 50 cents (4%) and 50 cents and above (2%). There are no respondent willing to pay 40 cents for the landscape maintenance.

Table 5 Frequency of value money for landscape

Description	Percentage (%)
1% (RM5k) from RM500k	40
5% (RM25k) from RM500k	38
10% (RM50k) from RM500k	8
15% (RM75k) from RM500k	2
20% (RM100k) from RM500k	8
more than RM100k	4

Table 6 Frequency of willingness to pay for landscape maintenance

Description	(Percentage %)
10 cents / sq. (RM100)	36
20 cents / sq. (RM200)	46
30 cents / sq. (RM300)	12
40 cents / sq. (RM400)	0
50 cents / sq. (RM500)	4
50 cents and above / sq. (above RM500)	2

5. DISCUSSION

5.1 Respondent's perception on major factor of purchasing a high rise residential unit

The findings show that the respondents regard price as the most important factor when purchasing a unit. This could be due to budget constraints, especially for buyers in the lower to middle income groups, since a house is a high value purchase which will take up a significant amount of their income. We also observed that respondents from the higher income groups tend to focus on landed properties while the lower and middle income groups tend to focus more on high-rise apartments. The location is regarded as the second most important factor, this would mean respondents would prefer a house closer to schools, amenities, and the city centre. This is followed by the factor of built up area. These results show that the respondents' preferences evidently depends on price and location of the residential building.

5.2 Respondent's perception on landscape element that will increase property value

The findings show that hardscape element (mean=3.48) is relatively more significant than the softscape element (mean=3.32). For hardscape element, it can be observed that functional element had the highest mean among all the other factors. The function elements such as the welcoming signage serves as an identity which gives an impression to the residents and visitors, while the pavilion and pergola serves as shelters and interaction points to users when they are doing outdoor activities. Lighting was also key factor, besides its aesthetic purpose, lighting serves to improve safety and reduce perceptions of danger within the compound. It can be observed that the attributes of safety, shelter, signage and lighting are essentials that users think will increase their property value. Landscape designs that create shade have higher value than designs of aesthetic value. This is followed by recreation elements which are swimming pool, children pool, Jacuzzi, BBQ pits, outdoor gym, playground, par course and rubberized jogging track. Recreational facilities provides a platform for social activities. In addition, it improves health through the physical activities by introducing outdoor gym, par course, playground and jogging track. Respondents preferred custom-made playground compared to pre-fabricated playground. This is because pre-fabricated playground is too common in the market. There is a trend for installation of custom-made playground which is in line with the theme of development. Water elements such as swimming pool, children pool, fish pond and water feature or fountain marked in higher mean value. Austin stated that proximity to water source was found to increase property value. However aesthetic element such as sculpture and fish pond was less important. This is because the design of sculpture is subjective whereas fish pond may create unfavourable smell and requires regular maintenance.

The findings for softscape element shows the aesthetic element and functional element have the same mean value. However, the aesthetic element such as vertical wall scored the high mean value. Vertical planting has become a trend and is widely used in residential and commercial properties. Other than aesthetic value, vertical planting can also be beneficial to the environment by improving the air quality. This is followed by flowering and colourful plants which give visual impact for the residents. Of the functional elements, the open lawn scored the highest mean value. The reason could be the possible use of the open area for various kinds of activities and events. Open space provides recreational areas for residents and helps to enhance the beauty and environmental quality of neighbourhoods. This is followed by fragrance plant and fruit tree species, it shows the plants have benefits as a source of food for human, birds and insects. Urban farming plot scored the lowest in the category, this could be because urban agriculture is still new and unpopular in high rise residential. In general, the used of plants more focussed on delivering a functionality of the landscape design (Fitrinadia, Ramzi, Izawati, Nurbazliah, 2014).

5.3 Respondent's valuation on landscape

Willingness to pay (WTP) is the largest sum of money an individual is agreeable to pay for a product or service. Results show that the willingness to pay for landscape is relatively low. The reasons given for the negative answers included non-affordability. Respondents were also asked whether they are willing to pay (a bid amount) money for the landscape implementation and maintenance. Majority are of the opinion that they had no extra income to pay for landscape features. Other reasons being that in the properties they occupied, they do not regard landscape as a necessity element and thus can be omitted form the provided facility.

6. CONCLUSION

The study was conducted in order to examine the common factors that influence a buyer's decision making and identify the landscape elements and characteristics that influence property value. The findings revel that the price and location of the high-rise residential development are the major factors when purchasing a unit. Collectively, the hardscape elements such as a swimming pool and childrens' pool is the main contributor of property value. This research also reveals the softscape elements such as fruit trees and exotic plants exert a relatively lower influence in terms of the perceived value of property prices. Landscape creation and design in high-rise residential buildings contributes to its property value. Landscaping today is not just for visual impact, but also serves as a form of lifestyle choice. Thus, designers and developers may look into this aspect when considering the living space as a whole, and seek to enhance the benefits of good landscaping. This will also benefit the community as it can allow for more function spaces which create spaces for activities, improve social interaction between residents, as well as making the building more environmentally conscious. This provides both tangible benefits such as increase in property value, and intangible benefits such as better environment and lifestyle for the residents. Understanding the type of landscape designs that help in increase property value will beneficial to buyers and investors. This is a landscape designer's navigation for the landscape element that will increase property value. However, social and environment justice aspects still need to further discuss.

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