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# BENEFITS AND BARRIERS OF PARTNERING TO QUANTITY SURVEYING FIRMS

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*ABSTRACT*

*This paper is to identify the implementation of partnering, its effects and possible strategies to be employed from the point of view of quantity surveyors. Both quantitative and qualitative research approaches were adopted to obtain relevant information to meet the objectives of the research. Two hundred and fifty (250) sets of questionnaires were distributed to registered quantity surveyors in the Klang Valley, Malaysia and forty (40) of them were returned and analysed. Subsequently, interviews were carried out with ten (10) experienced quantity surveyors to gather detailed information regarding their experience on partnering work. It was found that most of the quantity surveyors feel that the partnering are suitable to be implemented by quantity surveying firms and partnering should be promoted among the quantity surveyors to ensure the sustainable growth of the profession in the Malaysian construction industry*

*Keywords: Partnering, Quantity surveyors, Malaysia*

## INTRODUCTION

Since the publication of the Latham report, "Constructing the Team" (Cahill and Puybaraud, 2003), partnering has been increasingly mooted as the way forward and an annex to various methods to construction procurement. Partnering enables the industry to understand more clearly its clients' needs and objectives which includes improved efficiency and cost-effectiveness, increased innovation opportunities and the continuous improvement of quality products and services.

The construction industry involves several parties working together to achieve a common goal. These parties could be identified as the clients, contractors, consultants and suppliers whom individually has different organizational goals and objectives. As construction projects are subjected to competitive high-risk business, conflicts are normal among the project team members. In addressing this, partnering has since been perceived as a noble initiative in construction procurement given its ability to create good and balance relationship among the

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parties. In this instance, Hamimah et al. (2012) posit that the Malaysian construction industry will need to respond to partnering in order to create harmonious and balance work environment.

Construction partnering in Malaysia is increasingly popular both in multinational construction firms and local governments (Azlan Shah et al., 2010, Hamimah et al., 2011) due to various benefits achieved from it. According to Hamimah and Morledge (2003) partnering in the local context is carried out to improve the relationship between participants involved in the project. Ideally, parties are expected to perform together as an ideal team members in order to achieve the same project goals (Hamimah et al., 2012). Hence, the practice of partnering in construction projects is envisaged to improve the overall project performance (Will and Malik, 2007).

The European Construction Institute (2003) suggests two forms of construction partnering: (1) Project specific partnering which is short term, and (2) Strategic partnering which is of longer term. The form of partnering recommended for adoption by Quantity surveying firms is project specific partnering. The purpose is to facilitate a project by achieving better working environment, enhancing teamwork and communication. For partnering to bear its benefit, it is important for the parties to walk their chartered commitment. This as partnering involves workshops, meetings and problem solving session which would consume considerable time and expenses.

Despite the prominent progress of research in various aspects of partnering, there seems to be limited study available on partnering among the Quantity surveying firms in Malaysia. This has prompted a study to be conducted with an aim to gather hard evidences by way of perceived benefits and barriers to partnering which would be beneficial in proliferating the initiative to the profession. In order to achieve the overarching aim, two objectives were pursued: (1) to determine the benefits of partnering to Quantity surveying firms, and (2) to determine the barriers to partnering in Quantity surveying firms. The fulfilment of the objectives has enabled substantial information to be gathered which helped to add research data to the theories in partnering.

This paper is based on the partial findings of an undergraduate research project that studied on the applicability of partnering to quantity surveying firms in Malaysia. Although the findings reported here do not match the depth and breadth of the research that has been carried out, it nevertheless shed an indication on the future of partnering especially its perceived benefits and barriers to the quantity surveying firms. The paper is structured to firstly present the literature review. This was then followed by brief explanation on the methodology used and data analysis. Next, the outcome from the semi-structured interviews conducted to validate the findings was presented. Subsequently, the paper ends by emphasising on the significant insights learned from the study.

## LITERATURE REVIEW

Partnering is a set of strategic actions that deliver marked improvements in construction performance (Bennet and Jayes, 1995). It is driven by a clear understanding of mutual objectives and co-operative decision-making by multiple firms all focused on using feedback to continuously improve their joint performance. In a partnering arrangement, the fundamental components are formalized mutual objectives, agreed problem resolution methods and an active search for continuous measurable improvements. The ultimate goal of partnering should be to achieve a mutually beneficial situation for all parties in a project (Zuo et al., 2013).

Matthews et al. (2000) had stressed that partnering relationship is essentially built on the elements of trust, dedication to common goals and an understanding of each other's individual expectations and values. Gottlieb and Haugbølle (2013) add that trust allows teams to focus on interests rather than on personalities or positions thus promotes openness and encourages people to put their cards on the table. The element of trust further allow teams to commit themselves entirely to the project while continuously trying to understand each other's point of view and differences. Botha and Waldt (2010) opined that this situation was develop out of

reliability and integrity felt by the team. Without these crucial elements, teams lack the basis for open, mutual learning, communication and possibly real integration (Matthews et al., 2000).

According to Tennyson (2003), partnering workshop is one of the important features in partnering. Workshops are organized to establish a platform for exchanging information in a construction network. The gathering of information in the partnering workshops includes skills, comments, ideas, data, facts and knowledge. The objective of the workshop is to address key issues as well as discussing possible solutions to the issues (Bennet and Jayes, 1995, Will and Malik, 2007). Essentially, the goals of such workshop are to define and look into:

i. Awareness raising, where appropriate;
ii. Mutual objectives;
iii. Performance measurement frameworks;
iv. Roles and responsibilities;
v. Tools and processes.
vi. Greater certainty of the outcome in cost and time;
vii. Reduced wastage;
viii. Improving communications;
ix. Improving safety;
x. Reduced costs associated with disputes; and
xi. Potential for continuous improvement.

Partnering aims at empowering problem-solving at the lowest possible level and earliest possible time and over the shortest possible period (Lee and Shin, 2013). If the team members can come to agreement, they do not need help from upper management. But, if the problem is not resolved in a timely manner at one level of management, the issue then could be escalated according to a pre-arranged formula. Thus, leadership involvement in the partnering process is critical. The leaders must not only agree to partnering but to drive it in accordance to the pre-arranged formula as early as possible (Steven, 2004).

Azlan Shah et al. (2010) had observed that partnering in construction is perhaps the most innovative development to date in construction. The authors stated that partnering had managed to reduce construction conflicts by teams that are sharing common objectives and goal. To this, Awodele and Ogunsemi (2010) pointed that common objectives sustained during the project period may result towards a reasonable profit. This is supported by Hamimah et al. (2008); Hamimah et al. (2011) and Hamimah and Morledge (2003) who found that parties involved in a construction project have a financial benefit in situation where the project is completed on time and there were less variation orders. Hence, this reflects that the success of partnering relies on the systematic approach to problem resolution.

## METHODOLOGY

In the context of this study, the use of a questionnaire survey remains the most viable approach to obtain quantitative data based on the limited time frame, budget and manpower (Babbie, 2011, Yong and Mustaffa, 2013). To this, questions were formulated from prior understanding of the literature and was subsequently deployed to fulfil the research's objectives (Sekaran and Bougie, 2010). In order to compensate the weaknesses inherent with survey method, qualitative inquiry was proposed by way of semi-structured interviews. The mixed method strategy employed has been praised for its ability to complement the strengths and shortcomings of both quantitative and qualitative methods through convergence in findings (Vaus, 2001, Wilson, 1996, Oppenheim, 1992, Fellows and Liu, 2008).

The questionnaire used for this study comprises of three sections which accords to the objectives to be achieved from the study. These are: (1) background of the respondents; (2) perceived benefits to partnering; and (3) perceived barriers to partnering. Quantitative data gathered from the survey was analysed by way of mean and calculation of standard deviation. The aim of the analysis was to reduce the data and to observe any pattern of responses from the

survey. Results gathered were then ranked and discussed before it was brought as the input for semi-structured interview sessions held with four registered quantity surveyors. The interviews were focused at understanding the survey results and identifying issues concerning the implementation of partnering to quantity surveying firms.

## RESPONSE RATE

A total of 138 questionnaires were distributed to quantity surveying firms with a polite request for a senior staff/associates/directors to respond. As this was an exploratory study, respondents were reached by snowballing technique hence results and discussion were considered indicative in nature (Bryman, 2008, Saunders et al., 2007). Nevertheless, the results were considered sufficient to satisfy an academic inquiry and helps to broaden the area despite the inherent limit in its generalisation (Creswell, 2003).

The survey resulted to an effective response rate of 16% or twenty two (22) responses. This was after a strenuous follow up was made. Despite the response rate was below the normal response rate of 20% to 30% as suggested by Akintoye (2000); Akintoye and Fitzgerald (2000) and Dulaimi et al. (2003), this was nonetheless acceptable following research publications by Abdul-Aziz et al. (2007) and Abdul-Aziz and Sing (2010) in *Construction Management & Economics* that report less than 20% rate of response. Yong and Mustaffa (2013) had reflected that low responses in research on Malaysian construction industry was 'not uncommon' and relate that to what Dulaimi et al. (2003) described as 'fatigue' for having to respond to surveys on regular basis.

## RESPONDENT BACKGROUND

Table 1 and Table 2 show the crosstabulations between the size of companies/ construction experience and knowledge of partnering/construction experience respectively. As Table 1 shows, respondents having more than 20 years of construction experience have contributed the highest number of responses (40.9%) followed by respondents with 16 to 20 years of experience (31.8%), 11 to 15 years of experience (13.6%) while respondents with less than 10 years of experience combined contributed to 13.6%. Table 1 also shows that respondents with more than 20 years of construction experience are employed in medium and large firms while most respondents with experience less than 20 years concentrated in small firms. Separately in term of knowledge of partnering, Table 2 shows that 86.4% or 19 respondents indicate that they have a fair amount of knowledge in partnering while the remaining 13.6% specified minimum amount of knowledge in partnering. It is interesting to note from Table 2 that all nine (or 40.9%) respondents with experience of more than 20 years had indicated fair amount of knowledge in partnering followed by others in descend. The pattern in overall suggests that the survey had managed to reach experienced and knowledgeable personnel hence assured the credibility of the data collected.

**Table 1:** Size of companies * Construction experience Crosstabulation

| | | | Construction experience (years) | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | | | 1 - 5 | 6 - 10 | 11 - 15 | 16 - 20 | > 20 | |
| Size of companies | Small [a] | **Count** | **1** | **2** | **3** | **4** | **0** | **10** |
| | | % within Size of companies | 10.0% | 20.0% | 30.0% | 40.0% | 0.0% | 100.0% |
| | | % within Construction experience | 100.0% | 100.0% | 100.0% | 57.1% | 0.0% | 45.5% |
| | Medium [a] | **Count** | **0** | **0** | **0** | **3** | **5** | **8** |
| | | % within Size of companies | 0.0% | 0.0% | 0.0% | 37.5% | 62.5% | 100.0% |
| | | % within Construction experience | 0.0% | 0.0% | 0.0% | 42.9% | 55.6% | 36.4% |
| | Large [a] | **Count** | **0** | **0** | **0** | **0** | **4** | **4** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | % within Size of companies | 0.0% | 0.0% | 0.0% | 0.0% | 100.0% | 100.0% |
| | % within Construction experience | 0.0% | 0.0% | 0.0% | 0.0% | 44.4% | 18.2% |
| Total | **Count** | **1** | **2** | **3** | **7** | **9** | **22** |
| | % within Size of companies | 4.5% | 9.1% | 13.6% | 31.8% | 40.9% | 100.0% |
| | % within Construction experience | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

**Notes:** [a] Reflects the size of the companies where the respondents are employed. Small includes company having less than 30 employees, medium as having between 30 to 100 employees while large is having more than 100 employees.

**Table 2:** Knowledge of partnering * Construction experience Crosstabulation

| | | | Construction experience (years) | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | | | 1 - 5 | 6 - 10 | 11 - 15 | 16 - 20 | > 20 | |
| Knowledge of partnering | Fair | **Count** | **0** | **0** | **3** | **7** | **9** | **19** |
| | | % within Knowledge of partnering | 0.0% | 0.0% | 15.8% | 36.8% | 47.4% | 100.0% |
| | | % within Construction experience | 0.0% | 0.0% | 100.0% | 100.0% | 100.0% | 86.4% |
| | Minimum | **Count** | **1** | **2** | **0** | **0** | **0** | **3** |
| | | % within Knowledge of partnering | 33.3% | 66.7% | 0.0% | 0.0% | 0.0% | 100.0% |
| | | % within Construction experience | 100.0% | 100.0% | 0.0% | 0.0% | 0.0% | 13.6% |
| Total | | **Count** | **1** | **2** | **3** | **7** | **9** | **22** |
| | | % within Knowledge of partnering | 4.5% | 9.1% | 13.6% | 31.8% | 40.9% | 100.0% |
| | | % within Construction experience | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

## BENEFITS OF PARTNERING

The section of the questionnaire requires respondents to identify the benefits to partnering by responding on a Likert scale from '1' (strongly disagree) to '5' (strongly agree). The five-point rating scale was '1' = strongly disagree, '2' = disagree, '3' = neither agree nor disagree, '4' = agree and '5' = strongly agree. De Vaus (2002) maintains that offering the middle position will avoid the force choice situation where respondents are forced to indicate a commitment level which they do not actually have.

Data gathered were reduced and presented by way of descriptive analyses as shown in Table 3. This follows from suggestion made by Yong and Mustaffa (2013) who recommended the analyses for data which are qualitative in nature. The analysis techniques includes the calculation of mean and standard deviation with the ultimate aim of ranking the list of benefit in concordance to the responses gathered. In addition to the analysis techniques mentioned, the Cronbach's alpha reliability test was also carried out to determine the reliability of the survey instrument used (Cortina, 1993, Tavakol and Dennick, 2011). The result of Cronbach's alpha is 0.956, indicating that the data collected were interrelated and the instrument used is reliable (Field, 2005).

**Table 3:** Benefits of partnering to quantity surveying firms

| Benefits of partnering | Mean | Rank | Std. Dev. |
|---|---|---|---|
| Risk sharing | 4.18 | 1 | 0.50 |
| Quality improvement | 4.09 | 2 | 0.68 |
| Understanding of parties will be increased | 3.90 | 3 | 0.29 |
| Reduction in costs and time of project implementation | 3.77 | 4 | 0.69 |

| | | | |
|---|---|---|---|
| Increased customer satisfaction | 3.73 | 5 | 0.63 |
| Increased implementation speed | 3.73 | 6 | 0.83 |
| Operational savings | 3.64 | 7 | 0.79 |
| Enhanced facility maintenance | 3.55 | 8 | 0.51 |
| Construction projects cost savings | 3.45 | 9 | 0.80 |
| Improved return on resources | 3.36 | 10 | 0.49 |

**Source:** Survey data

The top five benefits of partnering as shown in Table 3 are risk sharing (1, 4.18), quality improvement (2, 4.09), increased understanding among parties (3, 3.90), reduction in project's cost and time (4, 3.77) and an increase in customer satisfaction (5, 3.73). These are followed by speedier project implementation (6, 3.73), operational savings (7, 3.64), better prospect of facility maintenance (8, 3.55), construction cost savings (9, 3.45) and improved return on resources (10, 3.36).

## BARRIERS OF PARTNERING

The section of the questionnaire requires respondents to identify the barriers of partnering. Similarly, a five points Likert scale was used which ranging from '1' (strongly disagree) to '5' (strongly agree). Data gathered were reduced and presented by way of descriptive analyses as shown in Table 4. The analysis techniques includes the calculation of mean and standard deviation with the ultimate aim of ranking the barriers in concordance to the responses gathered.

**Table 4:** Barriers of partnering to quantity surveying firms

| Barriers of partnering | Rank | Mean | Std. Dev. |
|---|---|---|---|
| Problems with trust | 1 | 4.09 | 0.81 |
| Problems with organisational culture | 2 | 3.86 | 0.71 |
| Difficult to incorporate | 3 | 3.55 | 0.59 |
| Difficulty aligning stakeholder's objectives | 4 | 3.55 | 0.86 |
| Lack of commitment | 5 | 3.14 | 0.71 |
| Lack of flexibility | 6 | 2.77 | 0.43 |
| No failings mindset | 7 | 1.45 | 0.51 |

**Source:** Survey data

As shown in Table 4, the main barrier of partnering is the problems with trust (1, 4.09) followed by organisational culture (2, 3.86), difficulty to incorporate in organisation (3, 3.55), difficulty aligning stakeholder's objectives (4, 3.55), lack of commitment (5, 3.14), lack of flexibility (6, 2.77) and a no failings mindset (7, 1.45). In overall, the outcome from the analysis suggests that it is not always easy to promote collaboration in particularly unsympathetic cultural, political or economic contexts (Tennyson, 2003).

## FINDINGS FROM INTERVIEWS

In depth semi-structured interviews were carried out with four (4) registered quantity surveyors which were focused at understanding the survey results and identifying issues concerning the implementation of partnering to quantity surveying firms. It was clearly projected from the interviews that the intention of partnering is to improve the relationships among team members by organising workshops and coordination meetings. Respondents informed that although partnering workshops were carried out, the lack of formalisation of partnering agreement had caused the workshop to be carried out on an intermittent basis. Respondents also weighed on the benefit for having regular facilitator for the workshops which imperative for the objectives of the workshop to be achieved.

All respondents confirmed that partnering enables quick decisions to be made by understanding the project's problems. To this, one respondent mentioned: "We need fast decision so the head took up the issues and make quick decisions to help the designer precede design. It is not yet a failure". However, we do not acquire the benefit. Lack of full commitment among the QS and it was found that the contract is not transparent and clear enough. Some QS are not ready for partnering and there is attitude problem among partners and project team. People do not understand what's each other need and role. However, some of the respondents stated that partnering system was not suitable. This is due to the difficulty of implementing in the real world when they are forced to go into partnering.

In order to obey the client's requirements, the profit had to be shared, which resulted in a small amount of individual professional fees received. Some of the respondents said that partnering systems are not really accepted by the older generations of quantity surveyors. They stated that they did not see any future in partnering when it is conducted in a long term approach. It is believed that partnering is suitable for a short-term basis; for example, at pre-contract stage where the QS team evaluates monetary value of the project. They also think that partnering is best applied among contractors rather than among Quantity Surveyors and suggested that partnering can be developed, but only by government interventions and awareness campaign.

Most of all the respondents claimed that partnering is most beneficial during earlier stage of contract. It is when the workshop will be held among the facilitator and key players. The quantity surveyors also need to make sure that their companies have to state legally or in clauses in the contract document without fail. This is believed to be able to avert future disputes. The respondent claimed that the usage of partnering is beneficial for multimillion projects using Public Fund Initiative project (PFI), turnkey and design and build procurements. It is believed that partnering is most beneficial when both companies were ready to collaborate resources; management, expertise and experiences. Besides, some of the respondents agreed that partnering was beneficial where the traditional risk strategy is not appropriate. It will spread the risk element and strive to achieve good returns and satisfaction. For some respondents, they would like the partnering to bring benefits to clients in hard time or recession. It would give the clients and them a way in managing their money.

Some of the respondents claimed that the partnering systems are most beneficial when:

1. [When] the parties of the partnering team knows each other and their method of working.
2. [..] If you want to do partnering you have to state legally or in clauses in the contract document by all means.
3. [For] big project with various type of building/ infrastructure, and limited time frame given.
4. [When] the resources are not achieve the requirement but the knowledge is more than required.
5. [For] projects where traditional risk transfer strategy is not appropriate.
6. [For] multimillion projects that are full of risks and limited framing availability, e.g.: PFI projects.
7. [For project] lacking in certain expertise or insufficient resources.
8. The right partner in the right field of job scope.
9. [During] hard time [economic].
10. [For] small and medium enterprises.
11. [When] all parties start to trust each other.
12. [Where] risk involved and return commensurate. Partnering spread the risk.

## CONCLUSION

The finding has clarified many issues that arose associated with the implementation of partnering system at early stage. The questionnaire survey has identified the perceived benefits and barriers from the respondents. The in-depth interviews also render an important message on the actual implementation of partnering among quantity surveyors.

Respondents verified the partnering system is suitable to be implanted in larger scale projects. The system could be applied if the size of the participating firms and the expertise of the quantity surveyor suited the project. Partnering is suitable to be applied but difficult to implement unless the project has its cost benefit and lower the risks among the parties involved. They felt that the government need to provide more courses and seminars among key players and students in the construction field. Educating early can increase the awareness of benefits and importance of partnering system in the early stage. In addition, the need of partnering courses is important to attract them to participate and discuss the matter in a more comprehensive manner with all bodies involved in the construction industry.

However, some of them felt that the system of partnering should be explained clearly. Hence, in the management, training should be provided to avoid any inefficiency of working committee, lack of trust between employees across partnering firms, partner's lack of management competence and resourcefulness and disagreement on allocation of staff positions in partnering. For an effective implementation of partnering system, it should go through the SWOT analysis (Strength-Weaknesses-Opportunity-Threat). Due to increased competitiveness and market slowdown, partnering might be a good alternative solution during the critical time. It would yield multi outcomes and improve the business relationship among the peers.

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# LANDSCAPE PROFESSIONALS' PERCEPTIONS ON TREE RETENTION AND LEGISLATION IN KUALA LUMPUR

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## ABSTRACT

*Environmental improvement has been on the national agenda since 1976, when the Parliament of Malaysia has announced the Town and Country Planning Act 1976 (Act 172) Part VA as a tool to preserve and conserve trees. The guidelines within the Tree Preservation Order (1995) stipulated in detail the interpretation of the 1976 Act. In addition to the Town and Country Planning Act 1976 (Act 172) Part VA, issues pertaining to tree retention were also mentioned in the Street, Drainage and Building Act 1974 (Act 133) Part II. The establishment of Federal Territory Planning Act (1982): Act 267 further strengthened the status of trees as the main catalyst of environmental conservation efforts in urban areas. The commitment to improve urban conditions continued in 1995 through the 'Garden the Nation' movement by the Federal Government. This study attempts to assess landscape professionals' perceptions towards the retaining of tree and legislation pertaining street trees in Kuala Lumpur. Data collected were based on the methodological framework. The methodological framework was divided into two: the quantitative section which deals with questionnaire surveys and the qualitative section for semi-structured interview. About 60 sets of questionnaires were distributed to the target group of various background of landscape professionals. The questionnaire was divided into three parts. Part one was allocated for questions aimed at obtaining personal information from the respondents. Part two and three were consisted of items measuring the respondents' perceptions towards their understanding on governance and practice, and tree biology. The design of the questionnaire was a combination of closed and open-ended questions, questions with 'Likert-scale' responses and also thematic drawing questions. There were seven self-administered questions which were then tested against the demographic profile of the respondents such as gender, age, ethnicity, educational attainment and occupation. A semi-structured interview was conducted to further clarify and verify the findings of the questionnaire. There were disparities among the landscape professionals' in perceiving governance and retaining trees in Kuala Lumpur city. In conclusion, the knowledge on retaining tree and tree biology should be embedded in the curriculum of the education programme as to inculcate landscape professionals into a knowledgeable person.*

***Keywords:*** *landscape professionals; Kuala Lumpur City Hall; tree retention and legislation*

## INTRODUCTION

Environmental improvement has been on the national agenda since 1976, when the Parliament of Malaysia announced the Town and Country Planning Act 1976 (Act 172) Part VA as a tool to preserve and conserve trees. The guidelines within the Tree Preservation Order (1995) stipulated in detail the interpretation of the Act 172. In addition to the Act, issues pertaining to tree retention are also mentioned in Street, Drainage and Building Act 1974 (Act 133) Part II. However, in the latter Act focuses on street tree maintenance and street tree planting.

The establishment of Federal Territory Planning Act (1982): Act 267 has further strengthened the status of trees as the main catalyst of environmental conservation efforts in urban areas. The commitments to preserve and to improve urban conditions continued in 1995 through 'Garden the Nation' campaign by the Federal Government. The main objective of the campaign is to achieve a status of 'Garden Cities' status by 2010. However, problems like funding, staffing, and people's perception have resulted in slow progress since it launched 15 years ago. To date, there is no particular Act, regulation or legal instrument solely devoted to tree retention. However, under the Town and Country Planning Act (Amendment) 1995 (Act A933), protection for selected trees particularly in urban areas have been strengthened. Under Section VA of the Act, local planning authorities are responsible for retaining and preserving trees within their jurisdictions but in reality this law is enforced in big cities. In the Kuala Lumpur area, the Tree Preservation Order (TPO) is very much taken into consideration whenever there is any planning development whereas in other places the legislation is often ignored.

Although under the Act 172 legislation is available to retain and preserve trees, understanding of implementing TPO among decision makers is still vague due to lack of exposure and experience in planning and managing physical development. To date very little research or study has been conducted on the effectiveness of the TPO's in preserving and safeguarding trees.

Main objective of this study is to determine whether there is a significant association between the landscape professionals' perceptions to tree retention and legislation. The specific objectives of this study are to identify landscape Kuala Lumpur's public perceptions to tree retention and governance, to determine which demographic profiles affected the perceptions and to determine whether there was a significant association between demographic profiles of Kuala Lumpur's public perceptions to tree retention and governance.

# LITERATURE REVIEW

## Legislation Pertaining to Tree Retention

There is no particular Act, regulation or legal instrument solely devoted to tree retention in in terms of Malaysia as a case study. A number of Acts containing provisions in determining tree retention, can be adopted in circumstances where new urban areas are proposed.

## Commonwealth Countries Experiences

Malaysia was British colony from 1948 to 1957 before gaining independence 45 years ago, and hence there is a similarity in rules and regulations. Since independence, United Kingdom law and legislations had been accepted and exercised widely throughout the country. For instance, the Malaysia Town and Country Planning Act 1976 (Act 172) is essentially a copy of the United Kingdom Act except that few amendments were made in October 2001 in order to adapt to the various multicultural background of Malaysian.

In the early 20th century, the United Kingdom was one of the most powerful countries in the world and apart from Malaysia, the United Kingdom had had colonized many countries. Many of these colonized or commonwealth countries are found in South East Asia and Asia Pacific region such as Singapore, Malaysia, Hong Kong and Australia. These commonwealth countries have incorporated and established the United Kingdom legislations system in their administrative system with several changes made to suit different circumstances.

Over the years, cross-cultural relationships between the United Kingdom and commonwealth countries have successfully accomplished a mutual understanding on various issues such as environmental and economic issues. As some commonwealth countries are originally from the "third world", efforts and attempts have been made to boost up their socio-economic status without seriously damaging the environment. Thus, a substantial number of legal instruments have been introduced to safe guard the environment, and in particular tree cover.

For instance, in Singapore, under the Parks and Trees Regulatory Section (PTRS) administers acts and legislations pertaining tree retention. These are spelt out in The Parks and Trees Act (Chapter 216) (1996), The Parks and Tree Rules (1997) and The Parks and Trees Preservation Order (National Parks Boards; The Guidelines and Checklists, 1st October 1998). This legislation also states that an appropriate guideline is required to guide transparently with the developers and qualified persons in dealing with matters concerning trees and development. In regards with the important requirement to detail out the legislations, the National Parks Board of Singapore has taken the responsibility to produce guidelines (Guideline on types of submissions to be submitted to NParks) on 1st October 1998 that help developers to shorten the approval process and obtain immediate approvals from NParks through higher standard submissions.

In the case of Australia, a number of Acts contain provisions in protecting and controlling development that threaten the well-being of trees exist in different circumstances. A person concerned about a threat to a tree needs to know which laws apply in the particular circumstances involved. Certain Acts such as the Nature Conservation Act 1980, Trespass on Territory Lands Act 1932, Endangered Species Protection Act 1992, Environment Protection and Biodiversity Conservation Act 1999, Trespass on Commonwealth Lands Ordinance 1932 (ACT) and the Environmental Planning and Assessment Act 1979 (NSW) are effective in retaining trees in Australia while the Land (Planning and Environment Act) 1991 is more towards indirect impact of the development on the landscape (Planning and Land Management, National Capital Authority and Environment ACT).

In the United Kingdom, the enforcement of tree retention is achieved through the additional orders and controls on the felling of trees such as A Guide to The Law and Good Practice published by the Department of Environment, United Kingdom in 1994 (cancelled), Town and Country Planning Act 1990 (in particular sections 197-214 as amended), The Planning and Compensation Act 1991 (section 23), Forestry Act 1967 (as amended), The Town and Country Planning (Trees) Regulations 1999 (Statutory Instrument number 1892), The Forestry (Felling of Trees) Regulations 1979 from The Forestry Commission, The Plant Health (Forestry) (Great Britain) Order 1993 (as amended), The Watermark Disease Local Authorities Order 1974 (as amended) and The Dutch Elm Disease (Local Authorities) Order 1984 (as amended). Through Tree Preservation Orders: A Guide to The Law and Good Practice (2000), every step in determining the process of tree retention has been spelt out intensely.

## Malaysian perspective on tree retention legislation

In Malaysia, through the Town and Country Planning Act (Amendment) 1995 (Act A933) protection for selected trees particularly in urban areas have been strengthened. Under Section VA, local planning authorities are responsible for retaining and preserving trees within their jurisdictions but in reality this law is enforced in big cities. In the Klang Valley area where the federal government is situated for an example, the TPO is very much taken into consideration whenever there is any planning development whereas in other places the legislation is often ignored.

Although under Act 172 (Town and Country Planning Act 1976) legislation is available to retain and preserve trees, understanding of implementing the Tree Preservation Order (TPO) among decision makers is still vague in Malaysia due to lack of exposure and experience in planning and managing physical development. To date very little research or study has been conducted on the effectiveness of the TPO's in preserving and safeguarding trees.

The guidelines on 'Tree Preservation Order' released by the Department of Town and Country Planning, Malaysia in 1998 are an interpretation of the Town and Country Planning Act 1976 (Act 172) Part VA (Tree Preservation Order). The guidelines were tailored for the state local authority, planners and those involved directly with the physical development of certain area, to ensure trees are protected where they are important.
The efficiency of the TPO Act in controlling the felling of trees in urban areas has been below expectation (Che Seman, 1999).

Other than the Town and Country Planning Act (Amendment) 1995 (Act A933) which is specially design to protect selected trees particularly in urban areas, Acts such as Street, Drainage and Building Act 1974 (Act 133) (as at 1st August 2002) and Federal Territory (Planning) Act 1982 (Act 267) (as at 31st October 1996) are closely related to tree retention. Certain guidelines published by the Town and Country Planning Department Peninsular Malaysia such as the Guidelines of Tree Preservation Orders (1998), The Planning Guidelines; The Preservation of Natural Topography in Physical Planning and Development in Accordance with the Town and Country Planning Act 1976 (Act 172) (1997) and the Guidelines of Development Proposal Report have complemented to the Acts. Under the Ministry of Science, Technology and The Environment, Malaysia a policy on biological diversity has been endorsed in 1998 to show Malaysian Government consciousness in the decreasing number of animal and plant species in Malaysian forest lately.

As Malaysia is a developing country, increasing in the environmental awareness among Malaysians has reached to the extent that people are concerned about development activities in their area. In line with this our government has established relevant environmental legislation, rules and regulations that aim at controlling and protecting the adverse impact of project development on the environment. To ensure that we get the best result from the project development and at the same time protecting and minimizing the adverse impact that will occurs, an Environmental Quality Management (EQM) plan is being developed and incorporated in the Trees Conservation and Landscape Management (TCLM) programs during project implementation.

TCLM not only details the practices and procedures for effective EQM but also facilitates the implementation and management of sound practice and performance in the design, construction and maintenance of the project (Forest Research Institute of Malaysia and Department of National Landscape).

## TREE BIOLOGY

Tree as a natural stand in the forest or planted in urban area is comprises of trunk and canopy structure living on the surface of land and the other half is root, embedded in the soil. Very much attention was given to tree structure on land however little concern was instigated to tree root lies in the soil. For the tree biology section, the description of tree root especially where the growing of root and physical planning of urban landscape that may influence the root growth was very much of the concern.

## Conflict between tree root and infrastructure

The aboveground parts of a plant depend on roots for anchorage. It has proved that building activity in urban area or in the vicinity of building area will associate with the degradation of tree root system. With the extreme condition of urban environment where the level of exposure to air pollution is high, soil compaction and other mean of intolerable condition influence the well beings of tree.

In Britain after the disastrous dry summer and winter in 1975-76, perception about tree as an aesthetic and 'humanize' elements in a city or in housing area had totally changed (Aldous, 1979). They were assumed to be a nuisance and contributed to the damaged of adjacent building (Aldous, 1979). However, later the professionals found out that tree with root system of different species reacted to the different characteristics of soil and thus concluded that it was not tree the culprit but because of limited knowledge of tree root system behavior under stress condition.

Starting from that point, many studies had been conducted by western scholars on tree root especially that involved with pavement, sidewalk, curbs, roads and buildings (Sydnor et al., 2000; Randrup et al., 2001; D'Amato et al., 2002). Data on the repair sidewalk history for 5,726 city sidewalks in Cincinnati were obtained to investigate the association between sidewalk failures and soil complexes. Sydnor et al. (2000) found out that soil complexes with different characteristics affected the design of the sidewalk. Sidewalks with more than 20 years old considered a failure when it suffered broken and cracked conditions. A cracked and broken sidewalk encouraged root growth beneath the cracked blocks. It was also discovered that trees did not appear to be a major contributor to the failure of sidewalks during the design period. As root encroachment in sidewalks and curbs incurred substantial amount of costs, Randrop et al. (2001), tried to overcome the problems by reviewing all the possibilities that contributed to the root encroachment such as different tree species in urban area, the characteristics of soil structure, irrigation in urban area for the growth of roots and introducing root barriers to control root growth.

Further studies by McPherson and Peper (1996) and McPherson (2000) on the cost incurred by root damaged the sidewalk concluded that millions of dollars were spent by the Chicago and California municipalities to tackle problem that existed between street tree root growth and sidewalks. In California cities alone, about $70.7 million annually were spent to overcome this problem with the largest expenditure was for sidewalk repair (McPherson, 2000).

In order to try to minimize the cost incur for sidewalk repair, preventive measures were taken as what being reviewed by Randrop et al. (2001). One of the measures is to identify suitable tree species for suitable location (Appleton et al., 2002 and D'Amato et al., 2002). For parking lots and pavement, chose trees that with small root surface and less dense tree canopies. This is to avoid root damage and to prevent rapid evaporation of precipitation (Appleton et al., 2002).

As different tree species performed differently under stress environment where by the root system are varies, it was suggested by D'Amato et al. (2002) to plant trees with the possibility of fewest root grow underneath sidewalk to avoid a greater damaged.

# METHODOLOGY

## Questionnaire survey

Questionnaire for the Landscape Professionals was different from the public; questions were more likely deal with their day-to-day working activities. For the Landscape Professionals section, questions in Section B (Legislation and practice) and Section C (Tree Biology) are discussed in this chapter. Section B (Legislation and practice) contained three questions. Question B1 is designed to explore respondents experience working with tree in development sites while in Question B2, the landscape professionals'

respondents were asked to answer the question, which related to possible factors that are unable to conserve trees. Question B3 is designed to examine respondents' knowledge on legislation and tree biology.

## Statistical analysis

The data was analysed by using the SPSS version 12 software. Descriptive statistics was used to analyse the descriptive data and inferential statistics such as $Chi^2$ test of association was employed to assess relationships between tested variables in terms of frequency of scoring. The Mann-Whitney U, Kruskal-Wallis and Spearmen's rank correlation (rho) tests were employed to further explore the differences between the groups of respondents.

# RESULTS AND DISCUSSIONS

## Background of Respondents

Questionnaire survey was distributed to local authority and other government agencies employing landscape professionals' (Landscape Architect and Town Planner) in Kuala Lumpur (Appendix 2). In total 60 questionnaires were distributed and 42 return successfully completed. Questions in Section B (Governance and Practice) namely Question B1, Question B2, Question B3 and questions in Section C (Tree Biology) namely Question C3, Question C4 and Question C5 of the Landscape Professionals questionnaire are presented in this chapter. Question C1 and Question C2 referred to their level of understanding on tree biology and their capacity to make decisions based on their tree biology knowledge. The purpose of the landscape professionals' survey was to measure their knowledge and understanding on governance pertaining to tree retention and tree biology.

## Response on legislation and practice

Table 1: $Chi^2$ test, comparison of mean scores and Mann-Whitney U test for Question B1

| Tested variables | $Chi^2$ test p-value | Mean Scores for Landscape Professionals n=21 Landscape Architect | Mean Scores for Landscape Professionals n=21 Town Planner | Mann-Whitney U p-value |
|---|---|---|---|---|
| a. My practice always try to conserve trees where possible | NS | 0.95 | 0.86 | 0.299 |
| b. We always try to conserve trees but the client is often disinterested | **0.046*** | **0.81** | **0.48** | **0.029*** |
| c. My understanding of the provision of Town and Country Planning Act 1976 (Act 172) Part VA is vague | **0.011*** | **0.19** | **-0.67** | **0.001*** |
| d. We will try to minimize the construction cost by removing trees that would complicate site works | NS | 0.24 | -0.33 | NS |
| e. We always try to replant young trees to replace trees lost | **0.015*** | 0.81 | 0.57 | NS |

*** p < 0.05 significantly difference at the level 0.05 – 2 tailed**
**NS – Not significant results**
**bold * value – represent the graph below**

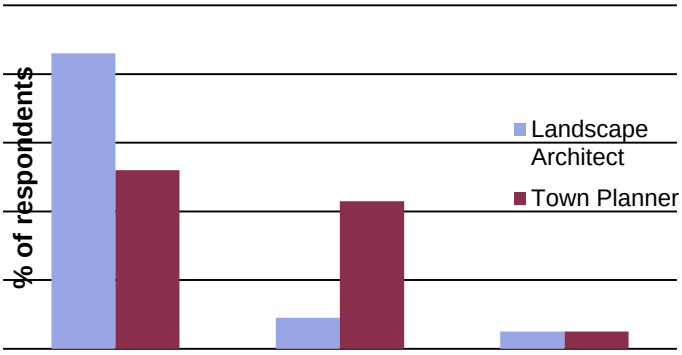


**Figure 1**: Comparison between Landscape Architect and Town Planner perceptions towards the statement *'We always try to conserve trees but the client is often disinterested'*

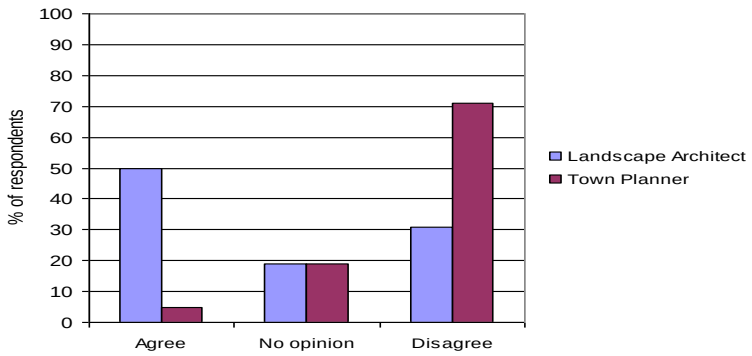


**Figure 2**: Comparison between Landscape Architect and Town Planner perceptions towards the statement *'My understanding of the provision of Town and Country Planning Act 1976 (Act 172) Part VA is vague'*

There were major disparities between landscape architect and town planners in their responses towards the tested variable statements. The first of these disparities was for the statement *'My understanding of the provision of Town and Country Planning Act 1976 (Act 172) Part VA is vague'* (Mann-Whitney U test, p=0.001) (Table 1) (Figure 2). About half of landscape architects agreed with the statement, nearly 20% have no opinion and about 30% disagreed. As would be expected most (70%) town planners opposed the statement. Local authority's town planners are the persons responsible in the implementation of Town and Country Planning Act 1976 (Act 172) Part VA Tree Preservation Order. Town planners are also accountable for inspecting trees on site, which they feel it is appropriate to preserve. The procedure of enforcing Tree Preservation Orders is the responsibility of town planner whereas the function of landscape architects are to confirm species of trees that need to be preserved in design proposals submitted for planning approval.

That 50% of landscape architects agreed that their knowledge about the provision of Town and Country Planning Act 1976 (Act 172) Part VA was vague, is cause for concern. Landscape architects are often working on behalf of clients such as developers, and liaise on the ground with other contractors who have a direct or indirect effect on the success of tree retention.

In the Town and Country Planning Act 1976 (Act 172) under Part IV for Planning Control, it is stipulated in Section 21A that a developer interested in developing an area has to submit a development proposal report which should include a survey of the trees and all forms of vegetation (Anonymous, 1976). However, the effectiveness of the Act in controlling tree felling in urban development areas in Kuala Lumpur has not been extensively evaluated. The only study of this (Che Seman, 1999), the efficiency of the Act 172 in controlling the felling of trees in urban areas was below expectation. Mrs.

S. Muhammad a Landscape Architect from a private agency, shares her experience on the practice of Act 172 Part VA (Tree Preservation Order) in urban area during a personal communication:

'...It is not very popular among the developer…to be frank when working with the developer they will try their best to minimize the construction cost and at the same time maximize the benefits of the development place. When the developer see the proposed place is okay, have potential and TPO is not very much of their concerned. Most of the place in Kuala Lumpur is no longer a forested area or places that have big trees that need to be retained. The developers are actually dealing with a place where there are small trees and not fall under the provision of Act 172 Part VA. So they feel safe…

'I only know what Act 172 the TPO is all about but not so much about it…but just like I told you before that whatever it is and when it comes to rules and regulations we always advice the developers to follow the rules. You know, the planner, the developer and I, myself will sit together and discussed about things that should be done before submitting any proposal for land development'

It was more likely that the Landscape Architect respondents agreed with the statements compared with the Town Planner respondents. The disparities between Landscape Architect and Town Planner were greatest for the statements; *'We always try to conserve trees but the client is often disinterested'* and *'My understanding of the provision of Town and Country Planning Act 1976 (Act 172) Part VA is vague'* (see Figure 1 and Figure 2). Very small percentages for the 'No opinion' option were gathered for both tested groups in terms of perceptions towards the statement *'My understanding of the provision of Town and Country Planning Act 1976 (Act 172) Part VA is vague'* (Figure 2).

**Table 2**: $Chi^2$ test, comparison of mean scores and Mann-Whitney U test for Question B2

| Tested variables | $Chi^2$ test p-value | Mean Scores for Landscape Professionals n=21 Landscape Architect | n=21 Town Planner | Mann-Whitney U p-value |
|---|---|---|---|---|
| a. No money to do this | **0.042*** | **0.33** | **-0.38** | **0.015*** |
| b. Little local public support for tree retention | NS | 0.81 | 0.38 | 0.042 |
| c. Sub contractors who fail to respect trees retention | NS | 0.86 | 0.86 | NS |
| d. The existing trees have no commercial or aesthetical values to be retained | NS | -0.33 | -0.43 | NS |
| e. Planners have agreed to building placement too close to tree | 0.013 | 0.14 | -0.29 | NS |

*** p < 0.05 significantly difference at the level 0.05 – 2 tailed**
**NS – Not significant results**
**bold * value – represent the graph below**

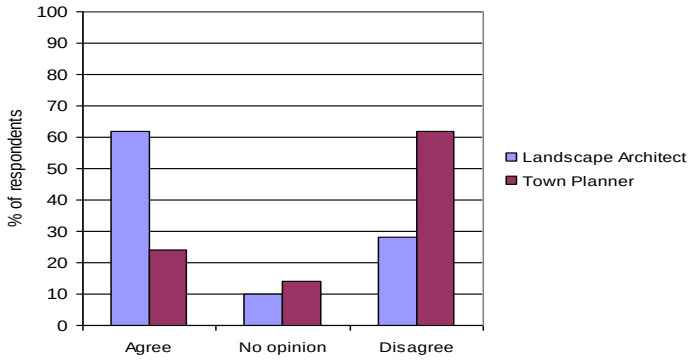


**Figure 3**: Comparison between Landscape Architect and Town Planner perceptions towards the main factor that was not possible to conserve trees which was *'No money to do this'*

Figure 3 show the disparity of perception between Landscape Architect and Town Planner towards the statement *'No money to do this'*. Town Planner and Landscape Architect groups have significant difference in perceptions ($Chi^2$ test, $p = 0.042$, Mann-Whitney test, $p = 0.015$) (Table 7.15), as might be expected given their different roles in the development process.

Another disparity in responses that reflect the nature of work that both landscape professionals undertake, was their perceptions on monetary factors in retaining trees (Mann-Whitney U test, p=0.015) (Table 2) (Figure 3). About 62% of landscape architects agreed with the statement that 'No money to do this (retain trees)' while another 10% responded for 'No opinion'. The remaining landscape architects (nearly 30%) disagreed with the statement. Their counterpart, the town planner, disagreed with the statement by 62%. This difference of view reflects the roles of town planners and landscape architects. The latter are ultimately involved in budgets to do works, whereas the town planners are not and have a more detached policy view of the issue. Technically, in the planning reports prepared by town planner, it is the responsibility of town planners to notify the landowner about the TPO Orders. If problems arise due to issues of retaining trees, the landowner can appeal to an Appeal Body for consideration and their consent.

In Town and Country Planning Act 1976 (Act 172) Part IV Planning Control in Section 22 in which the treatment of applications is concerned, it was stated that tree felling of a certain size, age, type or species at any particular location is prohibited unless it is to comply with other legal requirements (Anonymous, 1976).

Despite the above, it is a normal practice in Malaysia to fell a tree in order to give way for a new building to replace it rather than retaining the tree. The developer or contractor will act to minimize the cost of development by felling trees. With the consultation from the landscape professionals, the contractor can cut down the trees that are not within the specification of the provision of Town and Country Planning Act 1976 (Act 172) Part VA Tree Preservation Orders. New young trees will be planted in the new development area for the 'cosmetic' purposes and to follow the rules and regulation stipulated in the Town and Country Planning Act 1976 (Act 172) and Street, Drainage and Building Act (Act 133). Either with input from a LA trees on development sites can be removed as you suggest above except where they are subject to a TPO or the LA recommends retention for other reasons.

**Table 3**: Chi$^2$ test, comparison of mean scores and Mann-Whitney U test for Question B3

| Tested variables | Chi$^2$ test p-value | Mean Scores for Landscape Professionals n=21 Landscape Architect | n=21 Town Planner | Mann-Whitney U p-value |
|---|---|---|---|---|
| a. Decision on Tree Preservation Orders should only be made by experts in tree care | NS | 0.24 | -0.33 | NS |
| b. My practice lacks expertise on tree biology | **0.001*** | **-0.38** | **0.57** | **0.001** |
| c. Malaysian public are not yet prepared for tree retention in new development areas | NS | 0.24 | -0.24 | NS |
| d. Serious implementation of Tree Preservation Orders in every development areas would make the total cost of development prohibitive | NS | 0.43 | 0.33 | NS |
| e.The failure of tree retention in new development area is a serious concern | NS | 0.95 | 0.67 | NS |
| f. Understanding of Trees Conservation and Landscape Management Plan among landscape professional is vague. | NS | 0.48 | 0.38 | NS |

*** p < 0.05 significantly difference at the level 0.05 – 2 tailed**
**NS – Not significant results**
**bold * value – represent the graph below**

A very high significant difference was found for the statement *'My practice lacks expertise on tree biology'* (Chi$^2$ test, p=0.001) (Table 3). Figure 7.33 shows disparity in agreement and disagreement between the two tested groups (Mean value for Landscape Architect = -0.38 and mean value for Town Planner = 0.57) (Table 3).

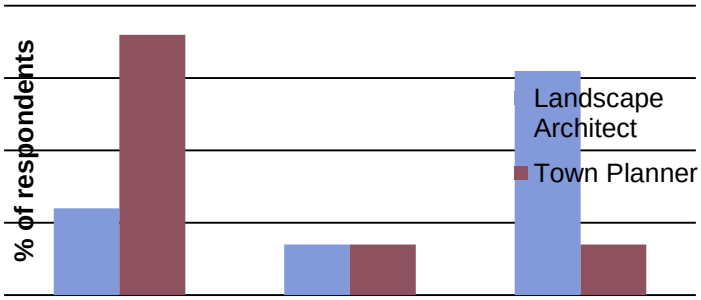


**Figure 4**: Comparison between Landscape Architect and Town Planner perceptions towards the statement *'My practice lacks expertise on tree biology'*

In Town and Country Planning Act 1976 (Act 172) Part IV Planning Control in Section 22 in which the treatment of applications is concerned, it was stated that tree felling of a certain size, age, type or species at any particular location is prohibited unless it is to comply with other legal requirements (Anonymous, 1976).

Despite the above, it is a normal practice in Malaysia to fell a tree in order to give way for a new building to replace it rather than retaining the tree. The developer or contractor will act to minimize the cost of development by felling trees. With the consultation from the landscape professionals, the contractor can cut down the trees that are not within the specification of the provision of Town and Country Planning Act 1976 (Act 172) Part VA Tree Preservation Orders. New young trees will be planted in the new development area for the 'cosmetic' purposes and to follow the rules and regulation

stipulated in the Town and Country Planning Act 1976 (Act 172) and Street, Drainage and Building Act (Act 133). Either with input from a LA trees on development sites can be removed as you suggest above except where they are subject to a TPO or the LA recommends retention for other reasons.

When the landscape professionals were asked about their perception on practice on tree biology, another disparity in responses was found (Mann-Whitney U test, p=0.001) (Table 1) (Figure 1). About 72% of town planner agreed with the statement that *'My practice lacks expertise on tree biology'* and the remaining percentages (28%) were for 'No opinion' and 'Disagree' responses. As for the landscape architects, about 62% disagreed with the statement and another 38% responded to either 'No opinion' or 'Agree'. This is what might be expected given that in practice Landscape architects are more closely involved in decisions on tree selection and use than are town planners, whose relationship is more at a distance.

Local authority planners will only release the Certificate Fitness of Occupancy for the development area if they are satisfied with the condition of trees planted by the landscape architects. In principle if trees planted on re-development projects under the supervision of landscape architects fail to grow healthy, the developer will have to replant and maintain trees to achieve this prior to hand them over to local authority care for long-term management.

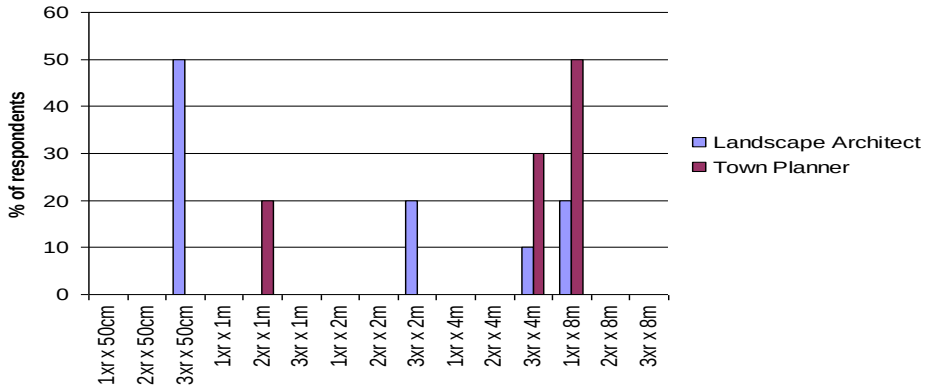


**Figure 5**: Comparison between Landscape Architect and Town Planner perceptions towards tree root depth and spread for the following hypothetical mature tree in the soil

In respond to the Question C3, there is a disparity of responses between Landscape Architects and Town Planners (Figure 5). Fifty percent of the landscape architects group responded to 3xr of root spread and 50cm of root depth. Another 20 percent answered for 3xr of root spread and 2m of root depth. While for the town planners, half of them or 50 percent responded to 1xr of root spread and 8m of root depth. Another 50 percent chose for a shallower area of root depth (1m and 4m).

It is clear from the survey that landscape architects not only believe they are well informed on aspects of tree biology relevant to successful retention in urban landscapes, but can demonstrate this objectively. In Question C3, landscape professionals were asked to draw tree root depth and spread of a mature tree in the soil. These drawings were then used to assess how closely the perception of landscape architects and town planners reflected current scientific understanding of the position of tree roots in urban soils. Most landscape architects showed close agreement with current scientific understanding, i.e. that tree roots are typically very wide spreading, extending well beyond the edge of the leaf canopy and shallowly placed in the soil (Dhyani et al., 1990; Stone and Kalisz, 1991 and Schroth, 1995).

In stark contrasts, most town planners' views of tree roots reflected a vernacular view of tree roots that roots were contained within the volume of space prescribed by the tree leaf canopy and were very deeply placed in the soil.

The consequences of these different understanding are profound for tree retention on development sites in Malaysia. Given that, Town Planners have a very inaccurate view of where tree roots are and in

particular grossly underestimate their lateral spread; they are likely to agree to development schemes near trees that will prove catastrophic in terms of root loss. If town planners held the same understandings as seem to be present in Landscape Architects, they would reject more of the harmful to trees development proposals.

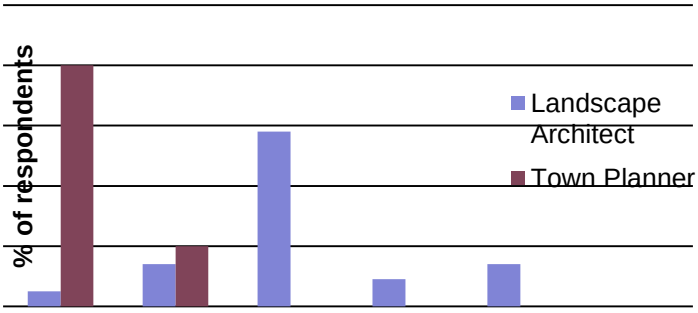


**Figure 6**: Comparison between Landscape Architect and Town Planner perceptions towards the minimum distance allowable to the large building to be placed

In respond to the question '*How close would you allow a large building to be placed next to a mature 20m tall tree with a canopy diameter of 15m in order to avoid serious root damage to the tree?',* there is again a marked disparity between Landscape Architects and Town Planners (Figure 6). Eighty percent of Town Planners thought 5m was acceptable and the remaining 20 percent thought that 10m from tree trunk was satisfactory for a large building to be placed next to a mature 20m tall tree with a canopy diameter of 15m in order to avoid serious root damage to the tree. The majority of the Landscape Architect respondents answered that 15m from tree trunk was the minimum distance for the tree to avoid serious injury to tree root. $Chi^2$ test shows significant association between the question and tested groups (Town Planner and Landscape Architect) ($p = 0.001$). This shows that Landscape Architect are much more cautious about building distances than were Town Planners.

How this plays out in practice is highlighted in Question C4, in which more than 80% of the landscape architects stated that a large building should be placed next to a mature tree no closer than 15m from tree trunk. More than 80% of town planners believed that placing the building as close as 5m away from the mature tree would not have an adverse effect. Cutler and Richardson (1981), state that to avoid tree root damage, the minimum distance from new building to existing mature trees is 20m, whilst recognizing that the likelihood of tree root damage depends on the tree species, type of soils and nature of the building construction (Cutler and Richardson, 1981; Aldous, 1979). A review of the website for the degree in Bachelor of Urban and Regional Planning programme in Universiti Teknologi Malaysia, shows that there are no modules related to tree biology. In contrast to this, trees feature strongly in the programme for Landscape Architecture in the same University.

Apart from assessing the landscape professionals' understanding on tree roots growth, they were also encouraged to answer question that would reflect their knowledge on tree root damaged. Another experience of tree felling in Malaysia is trees root conflict with utilities especially the drainage and pavement. Tree selection during the initial stage of developing proposal report, prepared by landscape professionals; always comprehend with the suitability of tree species, survival rate, growth, and toleration of the extremely poor conditions such in big cities. If trees could not manage growing under stress condition such as by tree roots encroaching the drainage system and pavement as the trees need space to grow and searching for water supply, the trees is most likely to be cut down to minimize the maintenance of drainage structure. Some trees may live longer in the extremely poor conditions but they are not growing well and healthy. Even though these trees may seem to adapt to the under stress condition in urban areas, it will turn out ugly and an eyesore to urban dwellers.

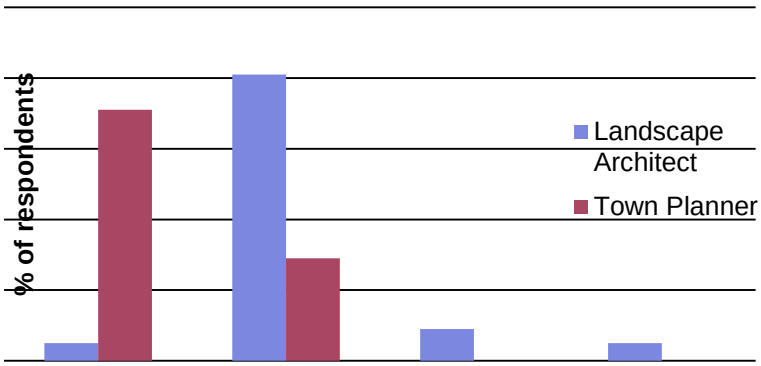


**Figure 7**: Comparison between Landscape Architect and Town Planner perceptions towards the percentage of roots destroyed by the excavation for the building

For Question C5, Figure 7 shows that about 71 percent of Town Planner respondents stated that 5 to 20 percent of the root system that might be destroyed by the excavation activity and another 29 percent answered for 30 to 50 of root system damaged. More than 50 percent of Landscape Architect respondents revealed that 30 to 50 percent of the root system affected when excavation activity for the building occurred. Significant value for $Chi^2$ was identified for the association between the question and the tested groups ($p = 0.000$)

In Question C5, majority of the landscape architects stated that about 30% to 50% of the root system might be destroyed by the excavation work for the building and about 15% of the landscape architects answered for other options. As for the town planners, about 71% of them answered 5 to 20 percent of the root system might be destroyed.

## Results for Landscape Professionals' perception of tree retention and legislation

There were major disparities between landscape architect and town planners in their responses towards the tested variable statements. The first of these disparities was for the statement *'My understanding of the provision of Town and Country Planning Act 1976 (Act 172) Part VA is vague'* (Mann-Whitney U test, p=0.001) (Table 7.9) (Figure 7.23). About half of landscape architects agreed with the statement, nearly 20% have no opinion and about 30% disagreed. As would be expected most (70%) town planners opposed the statement. Local authority's town planners are the persons responsible in the implementation of Town and Country Planning Act 1976 (Act 172) Part VA Tree Preservation Order. Town planners are also accountable for inspecting trees on site, which they feel it is appropriate to preserve. The procedure of enforcing Tree Preservation Orders is the responsibility of town planner whereas the function of landscape architects are to confirm species of trees that need to be preserved in design proposals submitted for planning approval.

That 50% of landscape architects agreed that their knowledge about the provision of Town and Country Planning Act 1976 (Act 172) Part VA was vague, is cause for concern. Landscape architects are often working on behalf of clients such as developers, and liaise on the ground with other contractors who have a direct or indirect effect on the success of tree retention.

In the Town and Country Planning Act 1976 (Act 172) under Part IV for Planning Control, it is stipulated in Section 21A that a developer interested in developing an area has to submit a development proposal report which should include a survey of the trees and all forms of vegetation (Anonymous, 1976).

However, the effectiveness of the Act in controlling tree felling in urban development areas in Kuala Lumpur has not been extensively evaluated. The only study of this (Che Seman, 1999), the efficiency

of the Act 172 in controlling the felling of trees in urban areas was below expectation. Mrs. S. Muhammad a Landscape Architect from a private agency, shares her experience on the practice of Act 172 Part VA (Tree Preservation Order) in urban area during a personal communication:

'...It is not very popular among the developer…to be frank when working with the developer they will try their best to minimize the construction cost and at the same time maximize the benefits of the development place. When the developer see the proposed place is okay, have potential and TPO is not very much of their concerned. Most of the place in Kuala Lumpur is no longer a forested area or places that have big trees that need to be retained. The developers are actually dealing with a place where there are small trees and not fall under the provision of Act 172 Part VA. So they feel safe…

'I only know what Act 172 the TPO is all about but not so much about it…but just like I told you before that whatever it is and when it comes to rules and regulations we always advice the developers to follow the rules. You know, the planner, the developer and I, myself will sit together and discussed about things that should be done before submitting any proposal for land development'

Another disparity in responses that reflect the nature of work that both landscape professionals undertake, was their perceptions on monetary factors in retaining trees (Mann-Whitney U test, p=0.015) (Table 7.10) (Figure 7.24). About 62% of landscape architects agreed with the statement that 'No money to do this (retain trees)' while another 10% responded for 'No opinion'. The remaining landscape architects (nearly 30%) disagreed with the statement. Their counterpart, the town planner, disagreed with the statement by 62%. This difference of view reflects the roles of town planners and landscape architects. The latter are ultimately involved in budgets to do works, where as the town planners are not and have a more detached policy view of the issue. Technically, in the planning reports prepared by town planner, it is the responsibility of town planners to notify the landowner about the TPO Orders. If problems arise due to issues of retaining trees, the landowner can appeal to an Appeal Body for consideration and their consent.

In Town and Country Planning Act 1976 (Act 172) Part IV Planning Control in Section 22 in which the treatment of applications is concerned, it was stated that tree felling of a certain size, age, type or species at any particular location is prohibited unless it is to comply with other legal requirements (Anonymous, 1976).

Despite the above, it is a normal practice in Malaysia to fell a tree in order to give way for a new building to replace it rather than retaining the tree. The developer or contractor will act to minimize the cost of development by felling trees. With the consultation from the landscape professionals, the contractor can cut down the trees that are not within the specification of the provision of Town and Country Planning Act 1976 (Act 172) Part VA Tree Preservation Orders. New young trees will be planted in the new development area for the 'cosmetic' purposes and to follow the rules and regulation stipulated in the Town and Country Planning Act 1976 (Act 172) and Street, Drainage and Building Act (Act 133). Either with input from a LA trees on development sites can be removed as you suggest above except where they are subject to a TPO or the LA recommends retention for other reasons.

When the landscape professionals were asked about their perception on practice on tree biology, another disparity in responses was found (Mann-Whitney U test, p=0.001) (Table 7.11) (Figure 7.26). About 72% of town planner agreed with the statement that *'My practice lacks expertise on tree biology'* and the remaining percentages (28%) were for 'No opinion' and 'Disagree' responses. As for the landscape architects, about 62% disagreed with the statement and another 38% responded to either 'No opinion' or 'Agree'. This is what might be expected given that in practice Landscape architects are more closely involved in decisions on tree selection and use than are town planners, whose relationship is more at a distance.

Local authority planners will only release the Certificate Fitness of Occupancy for the development area if they are satisfied with the condition of trees planted by the landscape architects. In principle if trees planted on re-development projects under the supervision of landscape architects fail to grow

healthy, the developer will have to replant and maintain trees to achieve this prior to hand them over to local authority care for long-term management.

It is clear from the survey that landscape architects not only believe they are well informed on aspects of tree biology relevant to successful retention in urban landscapes, but can demonstrate this objectively. In Question C3, landscape professionals were asked to draw tree root depth and spread of a mature tree in the soil. These drawings were then used to assess how closely the perception of landscape architects and town planners reflected current scientific understanding of the position of tree roots in urban soils. Most landscape architects showed close agreement with current scientific understanding, ie that tree roots are typically very widespreading, extending well beyond the edge of the leaf canopy and shallowly placed in the soil (Dhyani et al., 1990; Stone and Kalisz, 1991 and Schroth, 1995).

In stark contrasts, most town planners' views of tree roots reflected a vernacular view of tree roots that roots were contained within the volume of space prescribed by the tree leaf canopy and were very deeply placed in the soil.

The consequences of these different understanding are profound for tree retention on development sites in Malaysia. Given that, Town Planners have a very inaccurate view of where tree roots are and in particular grossly underestimate their lateral spread; they are likely to agree to development schemes near trees that will prove catastrophic in terms of root loss. If town planners held the same understandings as seem to be present in Landscape Architects, they would reject more of the harmful to trees development proposals.

How this plays out in practice is highlighted in Question C4, in which more than 80% of the landscape architects stated that a large building should be placed next to a mature tree no closer than 15m from tree trunk. More than 80% of town planners believed that placing the building as close as 5m away from the mature tree would not have an adverse effect. Cutler and Richardson (1981), state that to avoid tree root damage, the minimum distance from new building to existing mature trees is 20m, whilst recognizing that the likelihood of tree root damage depends on the tree species, type of soils and nature of the building construction (Cutler and Richardson, 1981; Aldous, 1979).

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In Question C5, majority of the landscape architects stated that about 30% to 50% of the root system might be destroyed by the excavation work for the building and about 15% of the landscape architects answered for other options. As for the town planners, about 71% of them answered 5 to 20 percent of the root system might be destroyed.

## CONCLUSION

In the landscape professionals section, the disparities of responses between the landscape architects and town planners are notable. Issues such as legislation and practical; and tree biology were tested among the landscape professionals. The most significant results were gathered from the monetary issue on preserving trees, their understanding of Tree Preservation Orders (Town and Country Planning Act 1976 (Act 172)) and their knowledge on tree biology. When further questions were asked to the landscape professionals on the tree root biology, very few of the landscape architects could answered the questions right. Knowledge about tree root system and structure are lacking among the landscape architects and they have to undertake in-house training for the enrichment of their knowledge.

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# KNOWLEDGE ON FUNCTIONS OF SCHOOL LANDSCAPE ON LEARNING ACHIEVEMENTS

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## ABSTRACT

*The main objective of this study is to identify the knowledge on functions of the schools' landscapes in the learning process. For the purpose of this study, data were collected through field observations using a checklist at 104 schools. Structured interviews were conducted with school managers and secondary data was obtained from various agencies. Results showed that the function of landscapes in assisting learning is at a high score, and rural schools are slight better than urban schools. There are a variety of learning activities held within the schools' landscape, mainly flower planting, followed by camping activities, cooking and carpentry. There is a significant relationship between the function of landscapes assisting in the learning process and academic achievements. This proves that landscape has an important role in the learning process and should be emphasised to create awareness amongst the school's community.*

***Keywords**: component; Knowledge on Landscape functions, assisting the learning process, components of landscaping, Klang Valley-Langat.*

## INTRODUCTION

Compared to other current issues in schools such as curriculum development, learning in schools, students' nutrition and diet and issues of student obesity, not many other studies have been conducted on knowledge on the function of landscapes on the schools' environment. This is not consistent with landscape planning of schools by the Ministry of Education and the National Landscape Policy (2011), which provides an opportunity for the school's management to beautify their school environment to enhance the learning experience. The school's management still has little awareness of the importance and function of the landscape environment in supporting the learning process.

Landscapes around the school's compound either directly or indirectly assist in the learning process (Dayment & Bell, 2007). This can be seen in terms of cognitive, psychomotor and affective skills through various spaces for leisure, socializing, interactions with landscaping components, during indoor or outdoor revision of lessons. In addition, the landscaped environment may also be used to conduct related subject matters such as geography, biology and chemistry. Trees can provide shade, to reduce the amount of sunlight on the building and the ground so as to moderate the temperature of the environment (Alamah Misni 2013). The micro climatic conditions of areas surrounded by trees are usually more comfortable when compared to open areas. Plants also act as the green lung to the schools' environment by absorbing carbon dioxide and by releasing oxygen. Green areas provide more oxygen, vital for the school's environment in creating responsive conditions for mental development. Evidence of a theory of *attention restoration* (Kaplan 1995; Berman, et. al. 2008; Kaplan & Berman, 2010), associates the green environment to the calming of the mind and increased concentration, especially to students who are studying. On the other hand, trees are also able to reduce extreme heat, thereby reducing the usage of air-conditioning in schools.

The ambient atmosphere outside classrooms stimulates the mind and encourages the learning process. Past studies indicate that some plants can stimulate the thinking process through regular interactions with students (Ke-Tsung Han, 2009). The concept of attractive landscape can also provide opportunities for students, teachers and visitors to get information about its flora species, function and the diversity of plants within the school environment. As a result, the more the components and elements of the landscape that can be used to support and facilitate the learning process, either directly or indirectly, the better and higher the quality of the school's landscape and functionality.

According to landscape architects from the Department of Landscape, Putrajaya Holdings Ltd., which is also the opinions of schools' principals, hard landscaping such as gazebos, park benches and tables can be used by students to discuss, analyze and facilitate the learning process. Hard landscapes such as information signage and tree descriptions can provide invaluable knowledge to the students whilst creating awareness about the importance of protecting the environment. Signage of reminders and life's advice containing verses from the Quran forms a contributing element to the character building of students to respect their teachers, friends and parents.

Soft landscaping components consisting of large, medium and small trees, along with fruit trees can cool temperatures within the schools and encourage students to review their lessons in the school compound. Moogk-Soulis, et. al. (2002), reported that trees can be used to provide shades against surfaces, acting as well as a barrier to hot winds and creating cool air instead.

Researchers also observed that artificial landscapes consisting of fish ponds, ponds and cascading ponds can provide therapeutic facilities to the school's occupants. Sounds of water elements soothe the mind, providing the ideal environment for the acumen of knowledge. Whilst the presence of koi fish, turtles and dragonflies can cultivate a sense of compassion for animals as well as care for the school environment. Students enjoy sitting near ponds during the breaks to feed the fish whilst playing with friends.

## LOCATION AND METHOD

The study was conducted in schools located in urban and rural areas in the Klang Valley - Langat, especially schools located in the state of Selangor. Schools located in the Shah Alam and Subang Jaya Municipality in the Petaling district; Selayang City Council in Gombak and Klang City Council in the Klang district were selected to represent schools in urban areas. Schools in the district of Hulu Langat and Sepang were chosen to represent schools in suburban and rural areas. Classification of urban and rural schools was based on criteria set by the State's Department of Education and the National Department of Education (2011). The Klang Valley-Langat districts in Selangor were chosen for this study due to several issues (refer Figure 1). First, its location is within areas of rapid urbanization with the highest population growth in Peninsular Malaysia. Second, schools within this region are experiencing rapid modernization since it is within the vicinity of innovation, in the extended metropolis of Kuala Lumpur. Third, the size of the available landscapes in the Klang Valley-Langat are limited and narrower, due to land shortage and escalating land prices that impacts on development patterns. Fourth, suburban and rural schools within the periphery of Klang Valley-Langat which are also experiencing dynamic changes, particularly in the district of Hulu Langat and Sepang (Katiman Rostam, 2006; Katiman, et. al., 2010).

This study uses primary and secondary data. Secondary data in the form of records, documents and other official statistics, gathered from various departments and agencies, particularly the State and Federal Territory Department of Education as well as the Ministry of Education. Basic data published by the Department of Statistics were also used. Information on students and teachers from the selected schools were also obtained. Other information that was collected includes the National Landscape Policy and National Philosophy on Education, which encompasses the planning and development of schools, population, socio-economic along with the Local and Structure Plans.

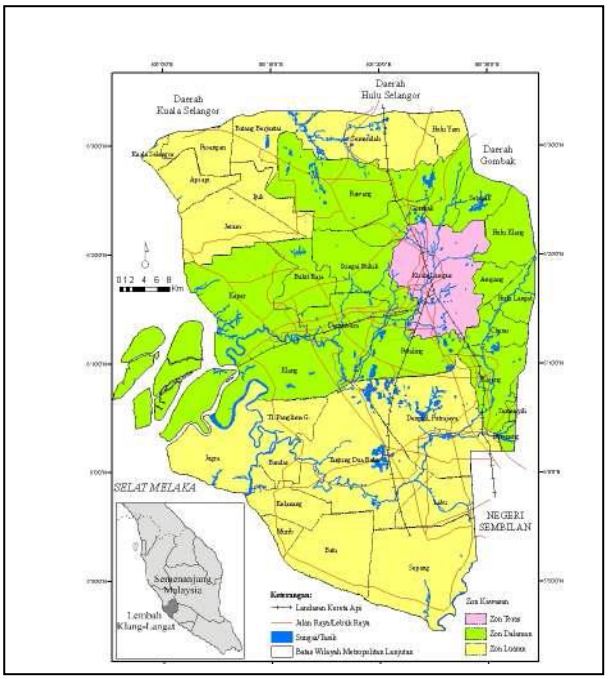


**Figure 1**: Klang Valley-Langat Metropolitan Region
Source: Katiman Rostam, et. al., (2010).

Data were also obtained through government agency's website including the Economic Planning Unit of the Prime Minister's Department, the Ministry of Trade and Industry, Selangor State Economic Planning Unit and Department of Statistics, Malaysia. Tertiary sources include books, journals, technical reports, theses and dissertations. Prior to the formation of the structured interview form, references of procedures, including literature reviews and expert feedback in the field of landscaping, landscape architects from the National Department of Landscape, experts in the field of education, experienced school teachers and landscape consultants with deep knowledge and experience in the field were obtained.

Structured interviews were conducted with top school administrators involved in the development and management of the school landscapes. In addition to principal of schools, other teachers involved with the planning and development includes assistant principals, student affairs representatives, extra-curricular senior assistants and senior assistants of the afternoon session were interviewed. Structured questions posed to respondents were directly related to the management of the landscape in terms of financial allocation, maintenance, problems faced and the financial provisions of landscape works. The number of school administrators interviewed for this study totalled 104 respondents. The selection of sample size was based on Krejcie and Morgan (1970) Table which denelianate the sample required from a population for structured interviews which was analyzed using the SPSS software and results discussed in the next section.

The functional quality of the landscapes in schools was evaluated based on the functional aspects with relation to the learning process. The basis of evaluation is on the relative merits of each component of hard, soft, artificial landscapes, facilities, flora and fauna using a Likert scale, consisting of 'not related', 'related' and 'highly related'. Overall, the quality of the functionality of the schools' landscape in the Klang Valley-Langat was divided into three categories: low, medium and high.

## RESULTS AND DISCUSSIONS

In assessing the knowledge on the function of learning, majority of schools are in the category of high scores (47.1%). Rural schools are at 51.6 percent, ahead of the urban schools (45.2%). This suggests that school administrators of rural schools are more sensitive to the functional components of hard, soft and artificial landscaping and in the usage of the external learning environment. Only 9.6 per cent of schools are in the low category *(Table 1).* Schools that are in the low category are unable to maximize it landscapes as a learning tool due to limited finances and other financial constraints.

**Table 1:** Functions of landscape in the learning process

| **Score** | **Category** | **Urban** | | **Rural** | | **Total** | |
|---|---|---|---|---|---|---|---|
| Quality | | Frequency | % | Frequency | % | Frequency | % |
| 123 - 153 | Low | 7 | 9.6 | 3 | 9.7 | 10 | 9.6 |
| 154 - 184 | Medium | 33 | 45.2 | 12 | 38.7 | 45 | 43.3 |
| 185 - 216 | High | 33 | 45.2 | 16 | 51.6 | 49 | 47.1 |
| Total | - | 73 | 100.0 | 31 | 100.0 | 104 | 100.0 |

For the high category, researchers took samples of schools located in urban areas located in Shah Alam, SMK 101 (a score of 215), followed by SMK 78 (score of 207) located in Subang Jaya and SMK 1 (with a score of 207) and a rural school in the district of Hulu Langat. Observations in these schools identified that the facility of parking, walkways, lighting and litter bins received the highest scores compared to other components. According to experts from the Ministry of Education, the State Department of Education and landscape architects from the National Department of Landscape; facilities such as walkways, toilets, litter bins and others used by the students is crucial in the learning process. Researchers observed that the facility component is the most frequently found in almost all schools in the study area.

The flora component scored the second highest after facility. Most urban schools prioritize the cultivation of plants to compensate for the hot climate in the city. This can serve as shade trees which absorb heat (Alamah Misni, 2013), cool the school and provide shade for students (Akbari & Taha, 1992). Comfortable shade trees increases enthusiasm and encourage students to gather and discuss extra-curricular activities, sports and recreation (Moogk - Soulis, 2002).

Other components that are equivalent in importance in assisting the learning process are hard landscape. Hard landscape consists of gazebos, pergolas, garden tables and chairs, decorative stones, signage and others. The presence of these hardscapes assists and encourages students to analyze, discuss and play. The peaceful and tranquil atmosphere assist students in the creative learning process assist in understanding the subjects taught. Some teachers utilise these hardscapes to maximise teaching and learning.

For rural schools, the hard landscapes are of a more important function in assisting the students. Many low-income families do not have basic facilities such as furniture or sufficient recreational facility or area. Thus, many rural students use the schools' environment as their second home to study, complete their homework or for recreation.

Artificial landscapes scored the lowest due to the number of artificial landscapes in schools within this region which are very limited. Construction and maintenance costs of artificial landscape are very high. The researchers did not find many artificial landscapes of fish ponds, cascading ponds or other types. Thus, the score for this component is low. Only a small number of schools with adequate financial resources were able to provide artificial landscapes. Although few in numbers, this component has high aesthetic value and serves as a therapy and a source of inspiration to the students. This in turn, assists the students in the learning process and the development of the students' personality.

The table shows the different learning activities held in the schools. For activities conducted outside the classroom, the mean activity of planting flowers obtained the highest value (6.98), followed by camping (6.85), cooking (5.88), carpentry (5.63) and others. The data were irregularly scattered amongst each other. All data are in standard deviation of between 0.800 to 5.500 units. Demonstrating that the school environment is used for the purpose of learning and co-curricular activities.

**Table 2:** Learning activities conducted in schools.

| Outdoor Classroom | N | Min | Standard Deviation |
|---|---|---|---|
| Flower Planting | 82 | 6.98 | 5.484 |
| Camping | 99 | 6.85 | 1.798 |
| Cooking | 73 | 5.88 | 2.248 |
| Carpentry and Painting | 89 | 5.63 | 2.145 |
| Recycling | 94 | 5.37 | 2.145 |
| Gardening / Vegetable | 59 | 5.08 | 2.238 |
| Observations of insects and its habitat | 76 | 5.05 | 1.825 |
| Green Earth & Environment Club | 89 | 4.70 | 1.921 |
| Observations of plants | 83 | 4.53 | 1.896 |
| Experiments | 70 | 4.34 | 2.126 |
| Relating subject matters to the schools' environment | 93 | 4.30 | 2.004 |
| Marching | 102 | 3.45 | 2.132 |
| Revision of subjects | 81 | 3.41 | 2.042 |
| Uniform Bodies | 104 | 2.88 | 1.585 |
| Sitting down to discuss | 89 | 2.70 | 1.991 |
| Physical Education | 103 | 1.50 | 0.862 |

## LANDSCAPE FUNCTIONS IN RELATIONSHIP WITH SCHOOLS' ACHIEVEMENT

Each landscape component was selected by hard, soft or artificial landscapes, facilities, fauna and flora based on certain scores. *Table 3* shows the mean of the dependent variables, in assisting in the learning process. The cognitive aspects of the landscape functions had the highest mean score with facility component (54.80), followed by the mean score of (43.59) for flora, and hard landscapes at 33.94. This proves that facilities such as guard posts, sidewalks, bicycle bays, lighting and fields have the highest contribution compared to other landscape components either directly or indirectly. This also proves that flora of trees with shade, fruit trees, shrubs, ground cover, plants are more prominent components used by students during their studies in identifying the name and function of plants, in relation to their science subjects, civil studies, geography, Islamic education and art. Standard deviation of hard landscapes, flora and fauna were high.

**Table 3:** Mean (dependent variables) representing the functional landscapes in assisting the learning process

| Landscape Components | Min | Standard Deviation |
|---|---|---|
| Facilities | 54.80 | 2.120 |
| Flora | 43.59 | 8.402 |
| Hardscapes | 33.94 | 6.270 |
| Fauna | 23.04 | 4.435 |
| Softscapes | 21.83 | 3.230 |
| Artificial Landscapes | 4.47 | 1.954 |
| Total | 180.20 | 18.270 |

The schools' landscapes should be able to assist in the learning process, particularly in academic results. The following test is conducted to identify possible correlations with academic achievements in SPM, PMR and other awards such as the High Performance School Award; National School of Hope and National Cluster Schools.

By using the chi-square statistic (Pearson correlation), the variable function of the landscape in assisting the learning process has been tested against variable segments of academic achievement. *Table 4* is determining the relationship between the function of landscapes in the learning process and that of academic achievement. The figure shows that the landscapes in assisting the learning process is in the high category (79.6%). There is a significant relationship between function of landscapes in assisting in the process of learning and academic achievement at the school level of 0.01 with the chi-square value 35.993.

**Table 4:** Relationship (Chi-Squared) between landscape functions (learning) and academic achievements (total)

| **Category of Achievement for School (Academic)** | **Scores for Functional Landscapes (Learning)** | | | | | |
|---|---|---|---|---|---|---|
| | High | | Medium | | Low | |
| | No of Schools | % | No of Schools | % | No of Schools. | % |
| High | 39 | 79.6 | 23 | 51.1 | 1 | 10.0 |
| Medium | 10 | 20.4 | 20 | 44.4 | 5 | 50.0 |
| Low | 0 | 0.0 | 2 | 4.4 | 4 | 40.0 |
| Total | 49 | 100.0 | 45 | 100.0 | 10 | 100.0 |

At the significance level of $p < 0.01$, df = 4, Chi-square and Pearson 35.993

A more detailed test was performed between the scores of the functional components of the landscape in assisting the school's academic achievements *(Table 5).* The test results showed a significant relationship at the weak and moderate levels (Guilford, 1956) between the total score of the functional landscape in assisting the learning process and that of academic achievements of schools ($r = 0.504$, $p < 0.01$). In general, these tests prove that there exists a relationship between the schools' landscapes with the learning process in the Klang Valley-Langat. The test results show a significant reading for the landscapes assisting in the learning process by the achievements of SPM ($r = 0.355$, $p < 0.01$); of PMR ($r = 0.370$, $p < 0.01$); and of awards for quality ($r = 0.243$, $p < 0.01$). This indicates that the landscapes assist in the learning process and has a significant relationship with all segments of academic achievement.

**Table 5:** Pearson correlation of the relationship between landscape functions in assisting the learning process and academic achievement

| Relationship | r | Sig | Relationship Level |
|---|---|---|---|
| Landscape functions (assist learning) with SPM achievements | 0.355** | 0.000 | Weak |
| Landscape functions (assist learning) with PMR achievements | 0.370** | 0.000 | Weak |
| Landscape functions (assist learning) with awards for quality | 0.243* | 0.013 | Weak |
| Landscape functions (assist learning) with academic achievement (overall) | 0.504** | 0.000 | Intermediate |

Note: ** Correlation relationship significant at level 0.01 (two-tailed); *Correlation is significant at the 0.05 level (two-tailed).

## CONCLUSION

Overall, there was a significant relationship even at moderate and high levels of landscape functions towards the learning process and academic achievements of the schools. At this juncture, the relationship with landscaping functions in facilitating the learning process consists of several components of hard landscaping elements such as gazebos, pergolas, benches, garden tables, signage, flower vases; and soft landscaping elements such as shade trees, shrubs, fruit trees, ground covers, and other herbal plants. It is anticipated if the school's landscapes are better managed, especially the hard and soft elements of

landscaping, the quality and its function is expected to increase. In effect, it is also expected to increase the school's academic achievement. Teachers are also able to use the school's garden for science, geography and arts education. Artificial landscapes such as fish ponds or cascading water features can also be used by teachers to provide examples of aquatic habitats. Students have the opportunity to examine it closely by also utilising hard landscape elements such as benches and tables and gazebos for discussions. This demonstrates that landscape has an important role in the learning process of schools. Hence, knowledge management on the function of landscape to learning process of schools is crucial in the design of landscape projects in schools.

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# A REVIEW OF WAQF PRACTICES IN THE CONTEXT OF DEVELOPMENT IN MALAYSIA

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**Abstract:** The instrument of waqf is becoming as one of important welfare instruments in Islam due to its long lasting benefits. It is characterized by its Shariah principles and pillars as well as its governance bodies spelled out under the purview of Islamic laws and regulatory laws in the country. Commonly, waqf can be divided into *waqf khas* and *waqf 'am* that require for different considerations mainly the extent of flexibility in determining the development intentions. Malaysia is gaining the effort to revitalize the waqf institution by focussing on at least five types of benefits namely as the religious, social welfare, health care, education, and economics. This article is intended to review the basic context of waqf and give some overviews on waqf development in Malaysia. In general, there is only one one-third of the total size of waqf lands in Malaysia are being developed, which left a huge opportunity to discover greater potentials from waqf institution in building up not only the socio benefits, but also the economics of the Muslims in the country. The involvement of the Federal Government in waqf development has spurred the use of waqf land into more dynamic intentions and bring out the economic opportunities. As a conclusion, this article is suggesting that waqf development in Malaysia is steadily in progress through the joint effort of various agencies and expected to see some greater contributions from waqf institution in the future.

**Keywords**: Waqf Institution, Waqf Development, Waqf Governance, Malaysia

## INTRODUCTION

Waqf is a sustainable voluntary charity giving instrument in Islam and appear to become an important welfare instrument in the Islamic civilization. There is an opinion that the first waqf was started by the Prophet Muhammad (ﷺ) through the built of Quba Mosque in Medina soon after His migration from Mecca. However, a hadith narrated by Abdullah Ibn Umar from Muslim was indicating that Umar was the first to start the practice of waqf after being advised by the Prophet Muhammad (ﷺ) regarding his land in Khaybar. The practice of waqf then has expanded in parallel with the religion and being perceived as a very influential charitable institution in Muslim civilization crossing countries and parts of the world including Malaysia. However, waqf institution is not at all time marking its glorious achievements, where the history of waqf has been described as a turbulent one with too many challenges along its way (Çizakça, 2011) especially the colonisation by Westerners that promulgate the agenda to disconnect the Muslims from the Islamic religion (Alias, 2013; Othman, 2013).

In general, the main objective of waqf is to support the general goods and the welfare of the disadvantaged group in the society while the donors are seeking for compound rewards in the hereafter from Allah (Mohsin, 2013). Motivated by the rewards from Allah and awareness on the welfare of the society, waqf has been created by waqf donors for the virtue of various charities. In Malaysia alone, there are at least five broad intentions of waqf, which covers the aspects of religion, social welfare, health care, education and economic purposes. From these five dedications, waqf has been established and dedicated to the non-exhaustive list of intentions and benefits such as for the built of mosques, religious schools, graveyards, universities, orphanages, office buildings, commercial premises, housings, hotels, utilities and several more. Waqf encourages people to do benevolent acts and creating a mechanism in the Islamic civilization to fulfil the needs of the community without bothering the government so much. Waqf is a multifaceted philanthropic instrument mainly because the donor can allocate the usage of its waqf beyond the religion boundaries and could be received and enjoyed by both

Muslims and Non-Muslims under the intention of socio-economic well-being. It is also more compelling than *zakat*, *sadaqah*, gift or *hibah* under the Islamic charity instruments because waqf must conform with the exclusive principles of perpetuity and inalienability that not available in other types of charity.

The management of waqf in Malaysia is vested under the responsibility of State Islamic Religious Councils (SIRCs) of every state in Malaysia and act as the sole trustee. SIRC of each state is holding the exclusive power to manage, develop and maintain these waqf assets according to the intention of the waqf donors. At the Federal Level, the Department of Awqaf, Zakat and Hajj (JAWHAR) is responsible for facilitating SIRCs on the planning, execution, procedures and guidelines without encroaching the exclusivity of SIRCs as the sole trustee (C. Mohd, 2012). Join effort by SIRCs and JAWHAR in the country have seen the progress of waqf institution through the development of various physical developments that certainly benefits the beneficiaries and indirectly contribute to the progress of socio-economic development in the country.

Realizing that waqf institution is expanding and has been discussed in broad context, this article is only intended to review the general context of waqf development in Malaysia. The first part of this article will introduce waqf including its definitions, principles, and pillars. Then, the article will explain on the governance of waqf in Malaysia. Next, will showcase some achievements of waqf development in Malaysia. Towards the end, it will provide some discussions on issues relating to waqf development and finally ends with a conclusion.

# LITERATURE REVIEW

## Waqf - Origin and definitions

Waqf refers to the religious endowment that brings the intention for religious, pious or charitable donation (Mar Iman & Mohammad, 2014). Interestingly, waqf appeared in the middle of a community that has the charity giving culture, where this giving culture was not only observed after the arrival of Islam but can be traced back long before that (Othman, 2013). Worship places that were built before the arrival of Islam such as Al-Bait Al Haram, Al-Aqsa Mosque, Christian churches and Jew Synagogues were suggesting that people in that civilizations were already dedicating their assets for religious purposes (Abu Zahrah, 2007). However, the good deeds under waqf cannot be treated as the same like the other kind of charity giving in the other religions before Islam. Othman (2013) asserted that waqf has derived from the inspiration of teachings in Islam that primarily originated from Quran and Hadith with the supporting elaborations from Ijma' by Islamic scholars. Waqf is different to *Piae-Causae* or *Fideicommissum* in Byzantine civilization, Res Sacrae in Ancient Rome (Othman, 2013) or Uses and Trust Doctrine in the Middle Age in England that become fundamental for today's conventional trust (Mannan, 2005; Othman, 2013). These old practices entailed different purpose and understanding that cannot be treated as same as waqf or perceiving that waqf was derived from these old practices.

The practice of waqf is not directly spelled out in Quran, but it derived from the action of Prophet Muhammad (ﷺ) that obviously guided by the direct revelation from Allah through the Quranic verses encouraging for doing good deeds. The Mosque of Quba in Medina was believed to be the first creation of waqf for religious purposes by Prophet Muhammad (ﷺ) in year 622 (seventh century) on His arrival after the migration from Mecca (Stibbard et al., 2012). Meanwhile according to a hadith reported by Muslim as narrated from Abdullah Ibn Umar, Umar r.a became the first to waqf his asset. It involved a piece of orchard land belongs to Umar (r.a) that was acquired through *ghanimah* (booty from the battle of Khaybar) in Khaybar (Sabran, 2002). After getting the land, Umar (r.a) then came to Rasulullah (pbuh) to seek for advice. Rasulullah had advised him to keep the land if he likes it, however, if he held the land for charity, it is much better for him and Allah (s.w.t.) knows best; Umar (r.a.) then declared that piece of land as a waqf and specify part of the produce or benefits for his descendants and another part for charities (JAWHAR, 2006; Sabran, 2002; Yaacob, 2013).

Waqf is derived from an Arabic word and has been associated with many interpretations that refer to various purposes and usage in the sentence, but literally, it means to hold, confinement, prohibition,

detain, prevent or restrain (Kahf, 2012; Mar Iman & Mohammad, 2014). However, many fiqh scholars came to an agreement to interpret the waqf as '*al-habs,'* which means 'detention' or 'confinement' because it is closer to the Shariah interpretation and regularly narrated in Prophet Muhammad (ﷺ)'s hadith (Sabran, 2002).

In the context of Islamic practice, waqf has been further defined as:
*'... to hold certain property and preserve it for the confined benefit of certain philanthropy and prohibiting any use or disposition of it outside that specific objective.'*

(Kahf, 2012).

*'... to retain property that is specific and owned whose ownership is transferable and it can be benefitted from while the property itself remains, and this is by suspending disposal of it, while the financial proceeds go towards something that is permissible and existent.'*

(Lock, 2015)

In the context of Malaysia, waqf, spelt as 'wakaf', has been accepted as a Malay word and has been defined as something that is given for public use (as a donation) or for the purposes related to Islam; religious endowment for the purpose of public or religious; provide something for needs related to religion (Kamus Dewan, 2005).

These definitions have become fundamental to the practice of waqf and for the scholars to interpret its details and legality. Having a good definition for waqf becomes important because waqf is not specifically mentioned in Quran and has to depend on hadith and *ijtihad* (diligence/independent reasoning) by Islamic scholars (Othman, 2013).

Waqf can be classified into a few types, however, for the context of this article, waqf is only divided into *waqf khas* and *waqf 'am* to represent its general type.

- Waqf *khas* – a waqf with a specific intention of benefits or beneficiaries
- Waqf *'am* – a waqf with general intention or unspecified dedication of benefits or beneficiaries

Looking at statistics provided by JAWHAR (later in this article), waqf *khas* is more common amongst donors in Malaysia assuming that they preferred to create waqf for religious purposes, which predominantly of mosques, graveyards, and religious schools. In the context of development, waqf *am* is providing more flexibility compared to waqf *khas* where the trustee may determine the best development options without restricted to specific intentions of the donors. Nevertheless, it still has to follow the basic principles of waqf to ensure that any development intentions do not break any *Shariah* rulings of waqf.

## Principles of waqf

Waqf and Trusts do not share the same characteristics although both can act as charity platforms because waqf property is vested in Allah, a Trust, on the other hand, is vested in the Trustee (Mannan, 2005). Waqf is also more profound compared to zakat, sadaqah and gift or any other instrument spelled out in Islam because the benefits from waqf are more sustain and can last longer. Depending on how waqf donor (*waqif*) express the intentions of his/her waqf through the waqf deeds (*sighah*), the practice of waqf must conform with the exclusive waqf principles of perpetuity, irrevocability, and inalienability (Mar Iman & Mohammad, 2014; Othman, 2013). These three waqf principles would ensure that the waqf assets (*mawquf*) will sustain and ever to generate benefits for the beneficiaries (*mawquf alaih*) to enjoy. In order to ensure sustainable benefits, waqf should be developed accordingly by putting waqf intentions and beneficiaries as the focal point while to adhere to the three principles as follows.

- Perpetuity

It brings the meaning that once the asset is dedicated as waqf, it remains for the intention of waqf forever (Kahf, 2011). Waqf should be consistent with the *sadaqah jariyah* as in a popular hadith narrated by Muslim from Abu Hurairah: *When the son of Adam dies, his deeds come to an end except for three,*

*sadaqah jariyah (the ongoing charity), the knowledge that benefits others and a righteous child who supplicates from him*. Waqf asset should be held its permanency and kept intact to maintain its enduring benefits (Mahamood & Ab. Rahman, 2015). Nevertheless, the concept of perpetuity in waqf is not taken literally, but on the relative to beyond the period of time in producing benefits or equal to a wage; mainly because waqf asset cannot maintain its condition forever (Mustofa al-Khin et al., 2009).

- Irrevocability

Irrevocability means the status of waqf asset cannot be cancelled or terminated once the waqf process is concluded, and this has been agreed by all four schools of Islamic law (Mar Iman & Mohammad, 2014). As opined by many Muslim jurists who argued that the right of ownership for waqf asset belongs to Allah, any intention to revoke waqf asset is not permitted, unless, the asset is going through the exchange or swap process (Kahf, 2011). The exchange process is called as *istibdal*, but have to follow certain Shariah obligations, strict scrutinization and subject to opinion and approval from Mufti or person who holds the highest religious authority.

- Inalienability

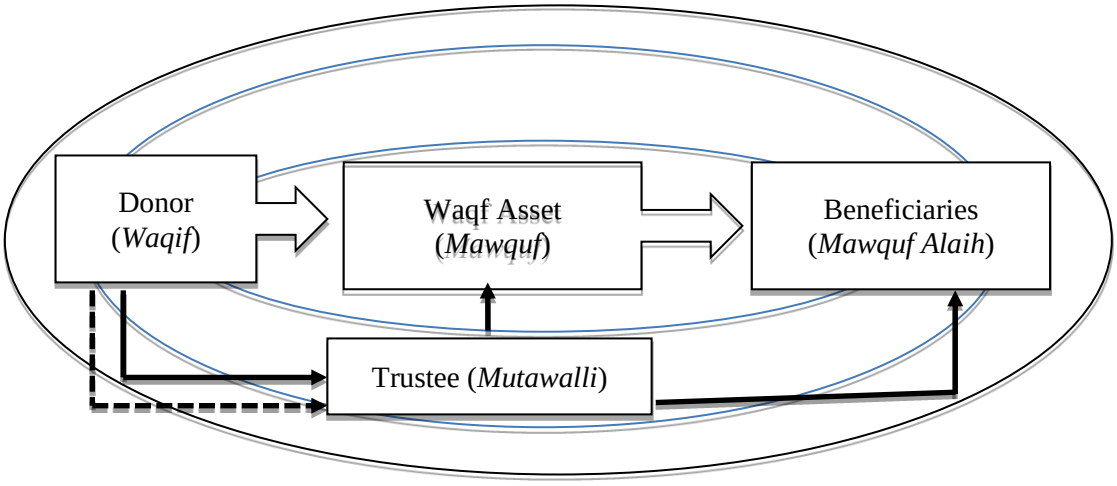
The concept of inalienability is derived from a hadith narrated by al-Bukhari and Muslim from Ibn Umar where after Umar (r.a) had declared his land in Khaybar as waqf before Prophet Muhammad (ﷺ), Umar (r.a.) had set a number of conditions; including that the land can never be sold, cannot be inherited to descendants, cannot be awarded as a gift where the income should be spent in the way of Allah, on the poor, the destitute, the kinsmen, and on buying freedom of the slave, and for Jihad, the service of the guest and the wayfarers; and for those who manage the land, can take to be eaten in moderation of the produce and should also feed his friends without asking for returns to grow rich by means of it (JAWHAR, 2006; Mar Iman & Mohammad, 2014; Sabran, 2002). So, any activities involving waqf asset cannot result in the possibility of losing out the asset into the possession of another party.

## The Pillars of Waqf

The practice of waqf entails four pillars that become the core for waqf to become valid under the Shariah context (Abdullah Al-Amin, 2013; Jabatan Wakaf, Zakat dan Haji (JAWHAR), 2006; Mar Iman & Mohammad, 2014). The pillars are:

1. The Donor/Endower (*waqif*)
2. The Beneficiary (*mawquf 'alaihi*)
3. The Declaration/Deeds/Contract (*sighah/waqfiya*)
4. The Asset/Article/Subject Matter (*mawquf*)

The relationships between all four waqf pillars including the position of the trustee are displayed in Figure 1.




(Source: Author)

**Figure 1:** The pillars of waqf

Each of the pillars has its rightful conditions, and all the four will constitute the whole governing conditions of waqf (Abdullah Al-Amin, 2013). The diagram is describing that the waqf starts from the donor who donates the asset for the enjoyment of beneficiaries under specific conditions specified in the waqf declaration. The declaration will become a binding between the waqf asset and its beneficiaries. After the waqf processes are completed, the donor will no longer hold the possession of that waqf asset because according to fiqh views, the ownership of the asset has been vested to Allah and the trustee is only responsible for managing the asset for the benefits of beneficiaries. Brief descriptions on each pillar are provided below to ensure the waqf is valid.

1. The donor/Endower (*Waqif*)

The donor/endower (waqif) has been described as the person/s (either Muslim or Non-Muslim) or social organisation or Government/Ruler who donate(s) or surrender(s) own asset for the intention of waqf (Othman, 2013). There are only two conditions for the donor to become valid, which firstly the donor must be free from any force to do waqf and secondly the donor must have full competence to donate (`Umar al-Shatiri, 2015 tn.). Additional to that, a child who does not reach the age of puberty, mentally ill or mentally disabled person, and slave are not qualified to create waqf (Abdullah Al-Amin, 2013; Omar & Ab Rahman, 2015). In brief, the donor for waqf can be anyone who has the capability and willing to donate for waqf under a reasonable state of mind without suppressing the people under their responsibility.

2. Waqf Asset/Property/Article (*mawquf*)

Waqf Asset, Property or Article that properly called as *mawquf*, *mahbus*, *muhabbas* or *habis* (Mahamood, 2006) is referring to the physical object dedicated as waqf by the donor to serve the stipulated purposes. It has eight conditions including to be a particular physical object, be specified, that it be owned, transferable to become a waqf, beneficial, the produced benefits do not eliminate the waqf asset itself, the asset or purpose is permissible in Islam and lastly to be used for its intended purpose (`Umar al-Shatiri, 2015 tn.). Section 19 of Wakaf (State of Selangor) Enactment 2015 stated that '*mawquf*' is a property that owns by the *waqif*, may be transferred or surrendered without any obstruction and may provide any benefit, interest or profit to the *mawquf 'alaih*. Cash, movable and immovable assets are valid for the purpose of waqf as long as it matches with waqf conditions (Mahamood & Ab. Rahman, 2015).

3. Beneficiary (*mawquf alaih*)

*Mawquf 'alaih* means the person who is entitled to receive any usufruct or benefit or both from the mawquf (Section 2, Wakaf (Perak) Enactment 2015). The recipient of waqf benefits can only be those who are not be disobedience and possible to take possession of the benefits (`Umar al-Shatiri, 2015 tn.). The *waqif* or the Waqf Management Committee with the consent of the *waqif* may determine waqf benefits and prescribe the beneficiaries (Section 6 of Wakaf (Perak) Enactment 2015). In Selangor, *waqif* may determine conditions to mawquf 'alaih, and under the scenario of the non-existence of mawquf 'alaih, the trustee would seek for the decision of the Fatwa Committee (Section 28 and 30 of Wakaf (State of Selangor) Enactment 2015).

4. Declaration (*Sighah/Waqfiya*)

The declaration of waqf is important in imparting the intention of the donor to the public, family, and beneficiaries. It has five conditions, which are clearly expressing the meaning of intention, permanence, implementation, an obvious recipient and adherence (`Umar al-Shatiri, 2015 tn.). Section 11(2) of Wakaf (State of Selangor) Enactment 2015 and Section 3 of Wakaf (State of Malacca) Enactment 2005, specifies that the declaration must be made before two witnesses according to *Shariah* Laws. The declaration can be made in written or oral, but the bottom line is to achieve the agreement between the donor and waqf trustee to eliminate any possible problems later on (Omar & Ab Rahman, 2015).

Waqf trustee (*mutawalli* or *nazir*) is an individual or institution that being appointed or established by the ruler to hold the responsibility of managing or taking care matters relating to waqf and ensures

all the beneficiaries receive the benefits (Dahlan et al., 2014; H. H. Omar & Ab Rahman, 2015). The position of the waqf trustee is not counted as one of the efficacy components of waqf pillars. Nevertheless, due to perpetuity characteristic of waqf, there will be a requirement for the appointment of trustee although not at the time of declaration (Mar Iman & Mohammad, 2014). So the position of the waqf trustee can be inferred as flexible where the appointment is based on the capability to perform the prescribed function of waqf and subject to the discretion of the donor, qadi or authority. However, in the context of waqf administration in Malaysia, all waqf assets are vested under the responsibility of State Islamic Religious Council (SIRC) of each state and become as the sole trustee for waqf.

## THE GOVERNANCE OF WAQF INSTITUTION IN MALAYSIA

Malaysia is a Federalism state, where the Federal institution consists of states and having a divide in administration power between the Federal and States. Thus, according to Article 74 of the Federal Constitution, the Parliament and the Legislature of a State may make laws on matters enumerated in the Federal List, State List and the Concurrent List set out in the Ninth Schedule of the Federal Constitution of Malaysia. Referring to that State List, matters relating to Islamic religion including waqf are to be placed under the regulatory power of the state under the respective State Islamic Religious Council (SIRC). SIRC is a body constituted under the provisions of the Islamic Administration legislations of each state as passed by the respective State Legislative Assemblies except for the Federal Territories of Kuala Lumpur, Labuan and Putrajaya by the Parliament (Mahamood, 2011).

Currently, all states in Malaysia are using provisions in their respective Administration of Islamic Law Enactment to administrate waqf together with other matters regarding Islam. Only the state of Selangor, Negeri Sembilan, Malacca, and Perak have already enforced their specific waqf enactments to specifically empower the administration of waqf in the state and have better legislation coverage on matters relating to waqf. Other states such as Terengganu and Penang are expecting to have their enactment in the near future.

The legislation pertaining waqf is actually not new because the effort can be traced long before the independence of Malaysia through the establishment of Mahomedan and Hindu Endowments Ordinance No. 92, 1905 (repealed) in Penang and Malacca, Control of Wakaf Enactment 1951 (repealed) in Perak, Johor Wakaf Prohibition Enactment 1911 (repealed) and Johor Wakaf Enactment 1935 (repealed) in Johor (Alias, 2013). The establishment of enactment in every state also saw the mandate to manage waqf was given to SIRCs started by Selangor in 1952, followed by Kelantan (1953), Terengganu (1955), Pahang (1956), Malacca (1959), Penang (1959), Negeri Sembilan (1960), Kedah (1962), Perlis (1964), Perak (1965), Kuala Lumpur (1974), Sabah (1977), Johor (1978) and Sarawak (2001) to hold the authority to manage waqf and taking all the management authority by private or individual *mutawalli* (trustee) (Sayin et al., 2006).

Although SIRCs are given the exclusive authority to manage waqf, in reality, however, there are weaknesses that require for remedial and corrections (Mat Rani, Sayin, Abdul Latiff, Ishak, & Othman, 2014). Thus, in 2004, the Federal Government under the administration of Prime Minister Dato' Seri Hj. Abdullah Ahmad Badawi has established the Department of Awqaf, Zakat and Hajj (JAWHAR) under the Prime Minister's Department to facilitate at the Federal level on matters regarding waqf, *zakat* and pilgrimage without encroaching the exclusivity power of the SIRCs (C. Mohd, 2012). In the context of waqf, JAWHAR has taken a huge step to transform the administration of waqf institution in the country by providing a platform to empower waqf management amongst SIRCs through the budget for waqf development in states, linkages with other agencies, facilitate the development financing approach, incorporating Geographical Information System (GIS) on waqf land database, meetings, discussions, trainings, waqf awareness campaigns, promoting uniformity of waqf enactments amongst SIRCs, publication of administration manuals and research journals, and establishing strategic partnering with core players (JAWHAR, 2012). Also, there is Malaysian Awqaf Foundation (Yayasan Waqaf Malaysia – YWM), a waqf entity that was established by JAWHAR on 23rd July 2008 to take advantage of waqf resources into economic benefits, while collecting and managing cash waqf.

Looking at the governance system for waqf in Malaysia, it can be said that the institution of waqf has been nationalized. It was started in 1950's when SIRCs have been given the mandate become the sole trustee of waqf and getting stronger when the government is getting involve through JAWHAR and YWM in recent years. In fact, the same can be observed since long ago in many Islamic countries that have regulated waqf at the national level and implementing the governance through the centralize administration such as Turkey, Kuwait, UAE, and Egypt.

## WAQF DEVELOPMENTS IN MALAYSIA

Statistics from JAWHAR has shown that the size of waqf land as at 2014 according to the states in Malaysia was recorded at 11,091.82 hectares (presented in Table 1). From that stated size, there were 3,277.01 hectares (29.54%) of developed waqf land, 23.77 hectares (0.21%) of waqf land developed by JAWHAR and 7,791.04 hectares (70.25%) of undeveloped waqf lands (C. Mohd, 2015). Based on a new study, but have yet to publish officially, C. Mohd (2015) has claimed that the size of waqf land is tripled than the figure that currently in use, but cannot deny the fact that the size of undeveloped waqf land is still remarkably huge.

**Table 1:** The Statistics of Waqf Lands in Malaysia as at 2014

| No. | State | Waqf Land Size (Hectares) | | Total Size |
|---|---|---|---|---|
| | | *Waqf Am* | *Waqf Khas* | |
| 1. | Perlis | 2.74 | 14.49 | 17.23 |
| 2. | Kedah | 158.62 | 1,086.25 | 1,244.88 |
| 3. | Penang | 220.03 | 559.23 | 779.26 |
| 4. | Perak | 116.12 | 0.00 | 116.12 |
| 5. | Selangor | 235.63 | 31.82 | 267.45 |
| 6. | Federal Territory | 0.49 | 1.59 | 2.08 |
| 7. | Negeri Sembilan | 1.01 | 14.49 | 15.50 |
| 8. | Malacca | 11.65 | 21.60 | 33.25 |
| 9. | Johor | 1,422.80 | 1,729.50 | 3,152.30 |
| 10. | Pahang | 0.00 | 723.82 | 723.82 |
| 11. | Kelantan | 16.01 | 157.04 | 173.06 |
| 12. | Terengganu | 581.66 | 1,878.58 | 2,460.24 |
| 13. | Sabah | 2,062.88 | 32.28 | 2,095.95 |
| 14. | Sarawak | 6.86 | 4.04 | 10.90 |
| | Grand Total | 4,836.50 | 6,255.33 | 11,091.82 |

(Source: C. Mohd, 2014)

The development of waqf institution in Malaysia has seen the involvement of various agencies including SIRCs, JAWHAR, YWM, private entities, financial institutions, universities, non-governmental organizations, co-operative, public committees, and individuals. The involvements of these multiple agencies have brought various opportunities and ideas in developing waqf in the country. Among the involved agencies, just to name a few, are including:

- Private Entities – UDA Waqf Sdn. Bhd., Nada Sepakat Sdn. Bhd.
- Financial Institution – Bank Muamalat Malaysia Berhad, Bank Islam Malaysia Berhad, Maybank Islamic Berhad, Al-Rajhi Bank Malaysia
- Universities (*Mutawalli* Status) – Universiti Putra Malaysia, Universiti Sains Islam Malaysia, Universiti Islam Malaysia, Universiti Teknologi Malaysia
- NGOs – Yayasan Pembangunan Ekonomi Islam Malaysia (YAPEIM), Pertubuhan Kebajikan Anak Yatim Malaysia (PEYATIM)
- Co-operative – Infaq Lil-Waqf Unit under ANGKASA

Through the involvements of various parties, waqf institution in Malaysia is now moving forward to initiate numerous high impact projects that can produce greater benefits to the public. For instance, through the application to the Federal Government, JAWHAR has received a budget for waqf development in the 9$^{th}$ Malaysia Plan for the realization of 23 projects, which consist of 19 physical development projects and four non-physical development projects. However, not all 23 projects were

completed within that plan period and were continued in the 10th Malaysia Plan by carrying forward the previous allocations, but with two of the projects have been cancelled due to a constraint on a budget. Additional to that, the budget under the 10th Malaysia Plan was not announced as 'ceiling budget' as the previous budget, but it was approved according to the rolling plan (year by year basis). During that plan period, JAWHAR has received a small allocation of RM72.76 million for the continuation of the previous projects (C. Mohd, 2014). The details are in Table 2 and 3. However, the ratio is still small compared to the current size of waqf land, which requires for different financing strategy.

**Table 2:** Waqf Development Projects by JAWHAR according to Malaysia Plan

| Period | No. of Approved Projects | Approved Ceiling Budget | Completed within Plan Period |
|---|---|---|---|
| 9th Malaysia Plan (2006-2010) | • 23 projects (out of the 39 applied projects costing at RM310.9 mill.) | RM256.4 mill | 11 projects |
| 10th Malaysia Plan (2011-2015) | • To continue 10 of 12 projects from previous Malaysia Plan<br>• No new project<br>• 2 projects were cancelled.<br><br>Note: *A total 42 projects were applied in the 10th Malaysia Plan consisting of 30 new projects and 12 project continuations with the costing of RM1.1817 billion* | Budgets were approved according to Rolling Plan (year to year basis) | 8 projects<br><br>(2 projects are still ongoing) |

(Source: C. Mohd, 2015a)

**Table 3:** The Development of Waqf Projects by JAWHAR

| Waqf Developments by JAWHAR | | |
|---|---|---|
| *Projects* | State | *Cost (RM)* |
| 1. Shop Houses, Mukim Utan Aji | Perlis | 4.24 mil. |
| 2. Orphanage, Mukim Derga | Kedah | 2.08 mil. |
| 3. Maahad Al Mashoor Al-Islami Education Complex, Balik Pulau | Penang | 41 mil |
| 4. Medium Cost Apartments, Sg. Nibong | | 17.5 mil. |
| 5. Medium Cost Apartments, Teluk Air Tawar, Butterworth | | 47.2 mil. |
| 6. Shop Offices, Tambun | Perak | 1.6 mil. |
| 7. Waqf Hotel, Taiping | | 19 mil. |
| 8. Preliminary Works for Waqf Complex | Selangor | 0.16 mil. |
| 9. Muallaf Centre, Seremban | Negeri | 4.5 mil |
| 10. Waqf Hotel & Astronomy Observation Complex, Port Dickson | Sembilan | 18 mil |
| 11. Waqf Hotel, Tg. Kling | Malacca | 25.6 mil |
| 12. Haemodialysis Centre, Batu Pahat | Johor | 8 mil. |
| 13. Women Protection Shelter, Johor Bahru | | 7.33 mil. |
| 14. Orphanage, Machang | Kelantan | 1.5 mil. |
| 15. Student Dormitories, Besut | Terengganu | 8.3 mil. |
| 16. Waqf Hotel, Kuala Terengganu | | 41.685 mil. |
| 17. Equipment for Islamic Complex, Kuching | Sarawak | 10 mil. |
| | Total | 257.695 mil. |

(C. Mohd, 2014; JAWHAR, 2016)

The above projects by JAWHAR were immediately producing benefits to the beneficiaries and some of them like the waqf hotels, dialysis centre and shop offices have generated incomes for waqf. In between 2011 and 2015, these properties were producing almost RM15 millions for the benefits of waqf and expected to grow (C. Mohd, 2015a).

Also, the government has allocated some budgets to YWM for the construction of retail units under its high impact small projects in the selected mosques with the focus on strengthening the economic development, education, social and welfare (Ismail et al., 2014). In order, Table 4 has shown the budget received by YWM to run its operation and initiate waqf development throughout the country. Meanwhile, Table 5 is breaking down the number of high impacts small projects by YWM according to states.

**Table 4:** Budget Allocation for YWM

| **No.** | **Events** | **Budget Allocations** |
|---|---|---|
| 1. | JAWHAR has established YWM on 23 July 2008 under the Trustees (Incorporation) Act 1952 (Revised 1981) [Act 258]. | RM4.5 million as Seed Capital from the Federal Government through JAWHAR |
| 2. | Allocation announced in the Malaysia Annual Budget year 2010 | RM20 million for the realization of high impact small projects |
| 3. | Allocation announced in the Malaysia Annual Budget year 2012 | RM10 million for waqf projects |
| 4. | Allocation announced in the Malaysia Annual Budget year 2013 | RM5 million for waqf projects |
| 5. | Announcement for the establishment of YWM Corporate Waqf by Prime Minister Dato' Sri Mohd. Najib bin Tun Hj. Abdul Razak on 14th July 2015. | RM50 million is channelled in staggered through the Unit Peneraju Agenda Bumiputra (TERAJU) |

(Source: C. Mohd, 2015a)

**Table 5:** High Impact Small Projects by YWM

| No. | State | *Bazar Wakaf Rakyat Projects* |
|---|---|---|
| 1. | Perlis | • 27 units |
| 2. | Kedah | • 28 units |
| 3. | Penang | • 20 units |
| 4. | Perak | • 27 units |
| 5. | Selangor | • 24 units |
| 6. | Kuala Lumpur | • 20 units<br>• 2 units of Souvenier Kiosk |
| 7. | Negeri Sembilan | • 17 units<br>• 3 unit of Wakaf Mart |
| 8. | Malacca | • 9 units<br>• 2 units of Souvenier Kiosk |
| 9. | Johor | • 32 units |
| 10. | Kelantan | • 15 units<br>• 5 units of 2-storey Bazar Wakaf Rakyat |
| 11. | Terengganu | • 19 units<br>• 4 units of 2-storey Bazar Wakaf Rakyat<br>• Terengganu Culinary Academy |
| 12. | Pahang | • 42 units |
| 13. | Sabah | • 17 units |
| Total | | 314 units |

(Source: http://www.jawhar.gov.my/iwakaf/index.php/pembangunan-wakaf)

Moving forward, YWM is strategizing its focus into Corporate Waqf Programme and Perbadanan Wakaf Nasional Berhad (PWNB), a subsidiary of YWM to run the Corporate Waqf Programme. YWM has received RM50 million as an initial fund to start the Corporate Waqf Programme and to be run by PWNB focussing on seven areas, which are welfare, commercial buildings, industry, hospitality, health care, plantation and boat (Haron et al., 2015; Utusan Online, 2015).

Other than the above, waqf developments by SIRCs are also impressively become the waqf icons such as:

1. Taman Wakaf Seetee Aisah, Seberang Jaya, Penang (landed residential units and commercial premises)
2. *Asnaf* MUIP Complex, Kuantan, Pahang (Shelter for the zakat entitled recipients such as the poor, converts, *riqab* and *fisabilillah*)
3. Jubli Perak Sultan Ismail Petra Islamic Complex, Panji, Kota Bharu, Kelantan (Orphanage and Maahad Tahfiz Quran)
4. Menara Imarah Wakaf MAIWP, Kuala Lumpur (a 34-storey Grade A office building)
5. Wisma MUIS, Kota Kinabalu, Sabah (Office building and Shariah Court Building)
6. Johor Waqf Building, Johor Bahru (Dialysis centre)
7. Darul Furqan Building, Johor Bahru (Islamic religious school)
8. Medan Hamidah, Kuching (food courts, commercial premises, recreation)

Overall, waqf developments in Malaysia have able to become waqf icons that can increase people awareness. However, it still requires rigorous planning and strategy to revitalize the efforts and bring waqf agenda into a higher level.

## CONCLUSION

Waqf institution in Malaysia is setting its pace to become as one of the countries to successfully make waqf as a significant contribution to the Muslim community. Malaysia is learning on how to revitalize the effort by focusing on dynamic approach from other countries such as Singapore, Turkey, Kuwait

and others. Apart from the public contributions and involvements, it can be observed recently that the Federal Government and some State Governments are supporting the development of waqf by allocating huge budgets and land plots for Islamic religious activities. Thus, indicating that the country is championing the *waqf irsod* (the waqf made by the ruler or government) sector and adding dynamic to the waqf institution in Malaysia. The dynamisms of the waqf donors, participants, products, and development types have shown that waqf institution in Malaysia is building up its capacities.

The current waqf development statistics that is showing only one-third of total waqf land size is expected to constantly grow by looking at the momentum that Malaysia has now. The joint effort between SIRCs and JAWHAR is expected to deliver better progress through the exploration of various waqf development approach by capitalizing the expertise from other industries such as the financial industry, property development industry, health industry, and higher education institution. The venture into alternative financing such as Sukuk for waqf is also expecting to boost waqf institution.

Now, with a new platform provided by JAWHAR, the communications, linkages and knowledge sharing between SIRCs are getting better. SIRCs now are learning and checking on each other to ensure that waqf agenda is always flourished. However, it will be the best for waqf institution if the development intention is shaped by the pure context of Islamic teachings that comprises of Islamic monotheism for the sake of getting blessings from Allah. By keeping the scope small, this article is reviewing the progress of waqf institution in the context of development hoping that it could inspire further exploration on waqf development in the country.

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