



**UNIVERSITI PUTRA MALAYSIA**

***INVESTIGATING THE FUNCTIONALITY AND CONSTRAINTS OF URBAN  
POCKET PARKS IN KUALA LUMPUR, MALAYSIA***

**PRAVEENA A/P BALAI KERISHNAN**

**FRSB 2020 13**



**INVESTIGATING THE FUNCTIONALITY AND CONSTRAINTS OF URBAN  
POCKET PARKS IN KUALA LUMPUR, MALAYSIA**

**By**

**PRAVEENA A/P BALAI KERISHNAN**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in  
Fulfilment of the Requirements for the Degree of Master of Science**

**July 2020**

## **COPYRIGHT**

All material contained within the thesis, including without limitation text, logos, icons, photographs and all other artwork, is copyright material of Universiti Putra Malaysia unless otherwise stated. Use may be made of any material contained within the thesis for non-commercial purposes from the copyright holder. Commercial use of material may only be made with the express, prior, written permission of Universiti Putra Malaysia.

Copyright © Universiti Putra Malaysia



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of  
the requirement for the degree of Master of Science

## **INVESTIGATING THE FUNCTIONALITY AND CONSTRAINTS OF URBAN POCKET PARKS IN KUALA LUMPUR, MALAYSIA**

By

**PRAVEENA A/P BALAI KERISHNAN**

**July 2020**

**Chair : Sreetheran Maruthaveeran, PhD**  
**Faculty : Design and Architecture**

Pocket parks are also known as mini-parks or vest-pocket parks because it is an urban open space at a very small scale. These parks were introduced in dense city areas to contribute to the environment, social and health benefits. Despite this, few studies have tackled the functionality and constraint of use of these parks. Therefore, this study aims to investigate the usability pattern and constraints of pocket parks in a Malaysian context through survey. The survey consist of N=390 respondents comprising of pocket parks users and non-users aged between 18–60 years old. Overall, there are slightly more female than male using the pocket parks in Kuala Lumpur and most frequent age group was people between 18-30 years old. Most of the respondents visit the pocket parks ‘sometimes’; this is not surprising as 78% of them have to travel more than 300 m to reach the pocket parks nearest to them. Only 59 respondents use the park frequently; while 26 respondents have never used the parks. Most of the respondents visit the pocket parks by foot. Based on the statistical data, majority of the respondents prefer to visit the pocket parks in group; however, there was no significant positive association between the social factor companionship (group or alone) with the time spent in the parks. The statistical data also shows that the respondents prefer to spend longer time at the park in the evening and morning. Majority of the respondents use the pocket parks to ‘rest and reduce stress’. Respondents also use the parks ‘to take a shortcut’ and ‘to meet others’. Both male and female have similar motives of using the parks; however, of the 30 respondents that use the pocket parks as an ‘easiest access to nature’, 73.3% are female. Majority of the respondents stated ‘time’ as their major constraint in using the parks. Apart from ‘time’, respondents are also concerned about ‘crowded activity area’, ‘poor hygiene of other park users’ well as ‘safety aspect’. The presence of ‘homeless people’ living in the park area and the presence of ‘foreign workers using the park’ also limited the park functionality. The respondents opted for pocket parks that are ‘serene’, yet the survey documented other preferences such as food trucks/bazaar and suggestions for

more activities such as zumba or aerobics. Food is one of the integral factors that brought more users to the pocket parks in Kuala Lumpur. This finding contradicts to small urban park users from other countries that visit the pocket parks as an opportunity to access nature for relaxation.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

## **KAJIAN KE ATAS KEBOLEHGUNAAN DAN KEKANGAN MENGGUNAKAN TAMAN POKET BANDAR DI KUALA LUMPUR, MALAYSIA**

Oleh

**PRAVEENA A/P BALAI KERISHNAN**

**Julai 2020**

**Pengerusi : Sreetheran Maruthaveeran, PhD**  
**Fakulti : Rekabentuk dan Senibina**

Taman poket juga dikenali sebagai taman mini atau taman poket-mini kerana ia adalah kawasan terbuka bandar pada skala yang sangat kecil. Taman-taman ini diperkenalkan di kawasan bandar yang padat bagi menyumbang kepada faedah alam sekitar, sosial dan kesihatan. Walau bagaimanapun, kajian berkenaan penggunaan dan kekangan menggunakan taman poket masih terhad. Oleh itu, kajian ini bertujuan mengkaji corak kebolehgunaan dan kekangan taman poket dalam konteks Malaysia melalui kaji selidik. Kaji selidik ini merangkumi N=390 responden yang terdiri daripada pengguna dan bukan pengguna taman poket berumur antara 18-60 tahun. Secara keseluruhan, terdapat lebih wanita berbanding lelaki yang menggunakan taman poket di Kuala Lumpur dan kumpulan umur yang paling kerap adalah pengguna antara 18-30 tahun. Tiada korelasi antara jantina, bangsa, tahap pendidikan, status perkahwinan dan pekerjaan; namun terdapat korelasi negatif yang signifikan untuk masa yang dihabiskan di taman berdasarkan kumpulan umur ( $r=-0.107$ ,  $p<0.05$ ). Sebilangan besar responden mengunjungi taman poket 'kadang-kadang'; ini tidak menghairankan kerana 78% daripada mereka harus melalui jarak lebih dari 300 m untuk ke taman poket yang berdekatan dengan mereka. Hanya 59 responden kerap menggunakan taman poket; manakala 26 responden tidak pernah menggunakan taman-taman ini. Sebilangan besar responden juga mengunjungi taman poket dengan 'berjalan kaki'. Berdasarkan data statistik, majoriti responden lebih suka mengunjungi taman poket secara berkumpulan; namun, tidak ada hubungan positif yang signifikan antara faktor sosial (kumpulan atau bersendirian) dengan masa yang dihabiskan di taman. Data statistik juga menunjukkan bahawa responden lebih suka menghabiskan masa lebih lama di taman pada waktu 'petang' dan 'pagi'. Sebilangan besar responden menggunakan taman poket untuk 'berehat dan mengurangkan tekanan'. Responden juga menggunakan taman poket untuk 'mengambil jalan pintas' dan 'bertemu orang lain'. Lelaki dan wanita mempunyai motif penggunaan taman poket yang sama; namun, daripada 30 responden yang menggunakan taman poket sebagai 'akses paling mudah ke kawasan alam semula jadi', 73.3% adalah wanita. Sebilangan besar responden menyatakan 'masa' sebagai kekangan utama mereka dalam menggunakan taman. Selain 'masa', responden juga bimbang dengan 'kawasan aktiviti yang sesak', 'tahap kebersihan pengguna taman yang lain' serta 'aspek

keselamatan'. Kehadiran 'golongan gelandangan' yang tinggal di kawasan taman serta kehadiran 'pekerja asing yang menggunakan taman' juga membataskan fungsi taman poket. Responden memilih taman poket yang 'tenang', namun hasil kajian mendokumentasikan pilihan lain seperti trak makanan/bazar dan cadangan untuk lebih banyak aktiviti seperti zumba atau aerobik di kawasan taman poket ini. Makanan adalah salah satu faktor penting yang menarik lebih ramai pengguna ke taman poket di Kuala Lumpur. Penemuan ini berbeza dengan pengguna taman poket dari negara barat yang mengunjungi taman poket sebagai peluang untuk mengakses alam semula jadi bagi berehat dan menenangkan fikiran.



## ACKNOWLEDGEMENTS

First of all, I would first like to express my gratitude to my main supervisor, Dr Sreetheran Maruthaveeran, Senior Lecturer of the Design and Architecture Faculty at Universiti Putra Malaysia for the useful comments, remarks and engagement throughout the learning process of this master thesis. I am also gratefully indebted to my co-supervisor, Assoc. Prof. LAr. Dr Suhardi Maulan for his important suggestions and valuable comments on this thesis.

Most importantly, I would like to thank all my friends who helped me get through the two years of graduate school. Also, I like to thank the participants in my survey, who have willingly shared their precious time during the process of data collection. Finally, I must express my very profound gratitude to my parents, Mr and Mrs Balai Kerishnan-Kaliyani; my husband Pratish Nair as well as my family members for the unfailing support and the continuous encouragement throughout my years of study as well as through the process of researching and writing this thesis. This accomplishment would not have been possible without them.

Thank you.



This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

**Sreetheran Maruthaveeran, PhD**

Senior Lecturer  
Faculty of Design and Architecture  
Universiti Putra Malaysia  
(Chairman)

**Suhardi Maulan, PhD**

Associate Professor, LAr  
Faculty of Design and Architecture  
Universiti Putra Malaysia  
(Member)

---

**ZALILAH MOHD SHARIFF, PhD**

Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date: 10 September 2020

## Declaration by graduate student

I hereby confirm that:

- this thesis is my original work;
- quotations, illustrations and citations have been duly referenced;
- this thesis has not been submitted previously or concurrently for any other degree at any other institutions;
- intellectual property from the thesis and copyright of thesis are fully-owned by Universiti Putra Malaysia, as according to the Universiti Putra Malaysia (Research) Rules 2012;
- written permission must be obtained from supervisor and the office of Deputy Vice-Chancellor (Research and Innovation) before thesis is published (in the form of written, printed or in electronic form) including books, journals, modules, proceedings, popular writings, seminar papers, manuscripts, posters, reports, lecture notes, learning modules or any other materials as stated in the Universiti Putra Malaysia (Research) Rules 2012;
- there is no plagiarism or data falsification/fabrication in the thesis, and scholarly integrity is upheld as according to the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) and the Universiti Putra Malaysia (Research) Rules 2012. The thesis has undergone plagiarism detection software.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name and Matric No.: Praveena a/p Balai Kerishnan, GS49899

## **Declaration by Members of Supervisory Committee**

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) are adhered to.

Signature: \_\_\_\_\_

Name of Chairman of  
Supervisory  
Committee:

Dr Sreetheran Maruthaveeran

Signature: \_\_\_\_\_

Name of Member of  
Supervisory  
Committee:

Assoc. Prof. LAr. Dr Suhardi Maulan

## TABLE OF CONTENTS

|                              | Page |
|------------------------------|------|
| <b>ABSTRACT</b>              | i    |
| <b>ABSTRAK</b>               | iii  |
| <b>ACKNOWLEDGEMENTS</b>      | v    |
| <b>APPROVAL</b>              | vi   |
| <b>DECLARATION</b>           | viii |
| <b>LIST OF TABLES</b>        | xii  |
| <b>LIST OF FIGURES</b>       | xiv  |
| <b>LIST OF ABBREVIATIONS</b> | xv   |

### CHAPTER

|          |  |    |
|----------|--|----|
| <b>1</b> | <b>INTRODUCTION</b>                                    | 1  |
|          | 1.1 Background to the Study                            | 1  |
|          | 1.2 Statement of Research Problems                     | 3  |
|          | 1.2.1 Limited Studies                                  | 3  |
|          | 1.2.2 Converted into Other Land Uses                   | 4  |
|          | 1.2.3 Undesirable Factors                              | 6  |
|          | 1.3 Research Aim and Objectives                        | 9  |
|          | 1.4 Research Questions                                 | 9  |
|          | 1.5 Hypothesis   | 10 |
|          | 1.6 Significance of the Study                          | 10 |
|          | 1.7 Limitation of the Study                            | 11 |
|          | 1.8 Organisation of the Thesis                         | 11 |
| <b>2</b> | <b>LITERATURE REVIEW</b>                               | 13 |
|          | 2.1 Introduction                                       | 13 |
|          | 2.2 Urban Green Spaces                                 | 13 |
|          | 2.2.1 Definition and Typology of Urban Green Spaces    | 13 |
|          | 2.2.2 Green Spaces in Malaysia                         | 15 |
|          | 2.3 Pocket Parks                                       | 19 |
|          | 2.3.1 Defining a Pocket Park                           | 19 |
|          | 2.3.2 A Systematic Review of the Usage of Pocket Parks | 21 |
|          | 2.3.3 Patterns of visits and park use                  | 42 |
|          | 2.3.4 Constraints Associated with Pocket Parks' Use    | 45 |
|          | 2.3.5 Emerging Research Topics on Pocket Parks         | 45 |
|          | 2.3.6 Pocket Parks in Malaysia                         | 46 |
|          | 2.4 Research Framework                                 | 48 |
|          | 2.4.1 Socio-Ecological Model (SE-Model)                | 49 |
|          | 2.4.2 Components of SE-Model                           | 49 |
|          | 2.5 Conclusion   | 52 |

|          |   |            |
|----------|---|------------|
| <b>3</b> | <b>RESEARCH METHODOLOGY</b>                       | <b>53</b>  |
| 3.1      | Introduction                                      | 53         |
| 3.2      | Research Design                                   | 53         |
| 3.3      | Study Area  | 55         |
| 3.4      | Sample and Sampling Design                        | 61         |
| 3.5      | Observation                                       | 62         |
| 3.6      | Survey Instrument and Procedure                   | 63         |
| 3.7      | Pilot Study                                       | 64         |
| 3.8      | Data Analysis                                     | 64         |
| 3.8.1    | Descriptive Statistics                            | 65         |
| 3.8.2    | The Independent Sample T-test                     | 65         |
| 3.8.3    | One-Way Analyses of Variance (ANOVA)              | 65         |
| 3.9      | Conclusion  | 66         |
| <b>4</b> | <b>RESULTS AND DISCUSSION</b>                     | <b>67</b>  |
| 4.1      | Introduction                                      | 67         |
| 4.2      | An Overview of the Pocket Parks in Kuala Lumpur   | 67         |
| 4.3      | The Response and Distribution of Park Respondents | 72         |
| 4.4      | Demographic Background of Respondents             | 74         |
| 4.5      | Pocket Park Usage                                 | 77         |
| 4.6      | Motives for Visiting Pocket Parks                 | 81         |
| 4.7      | Constraints Associated with Pocket Parks' Use     | 88         |
| 4.8      | The Preferred Characteristic of Pocket Parks      | 92         |
| 4.9      | Recommendations for Improvement                   | 92         |
| 4.10     | Conclusion  | 93         |
| <b>5</b> | <b>SUMMARY, CONCLUSION AND RECOMMENDATIONS</b>    | <b>95</b>  |
| 5.1      | Introduction                                      | 95         |
| 5.2      | Conclusion  | 95         |
| 5.3      | Summary of Major Findings                         | 95         |
| 5.4      | Recommendations                                   | 96         |
|          | <b>REFERENCES</b>                                 | <b>98</b>  |
|          | <b>APPENDICES</b>                                 | <b>114</b> |
|          | <b>BIODATA OF STUDENT</b>                         | <b>116</b> |
|          | <b>LIST OF PUBLICATION</b>                        | <b>117</b> |

## LIST OF TABLES

| Table   | Page |
|---|------|
| 2.1 The typology or urban green space.  | 14   |
| 2.2 The hierarchy of open spaces in Malaysia.   | 16   |
| 2.3 The open spaces typology in Malaysia.   | 17   |
| 2.4 The NRPA classification systems of parks.   | 20   |
| 2.5 Journal distribution of the 13 research papers.   | 23   |
| 2.6 Summary of findings from the reviewed articles (n=13).  | 25   |
| 2.7 The SE-Model components (factors) identified contributing to the usage of pocket parks by the selected studies. | 39   |
| 2.8 The categories that describe the dominant physical characteristics and design of a park.                        | 44   |
| 3.1 The selected pocket parks in Kuala Lumpur.  | 58   |
| 3.2 Krejcie and Morgan's sample size determination table.   | 62   |
| 4.1 The features and observed characteristics of the selected pocket parks in Kuala Lumpur.                         | 69   |
| 4.2 Potential and approached respondents as well as per pocket park response rate.                                  | 73   |
| 4.3 Demographic background of the respondents.  | 75   |
| 4.4 Summary of respondents' age group.  | 76   |
| 4.5 The analysis of the usability pattern.  | 78   |
| 4.6 The descriptive analysis of the motives for visiting pocket parks based on gender.                              | 84   |
| 4.7 The descriptive analysis of the motives for visiting pocket parks based on age group.                           | 85   |
| 4.8 The descriptive analysis of the motives for visiting the pocket parks based on education level.                 | 86   |

|      |   |    |
|------|---|----|
| 4.9  | The descriptive analysis of the motives for visiting the pocket parks based on occupation.      | 87 |
| 4.10 | The respondents's constraint in using the pocket park.  | 89 |
| 4.11 | The descriptive analysis on the main constraints that hinder pocket park usage based on gender. | 90 |
| 4.12 | The frequency for park use after improvement.   | 91 |
| 4.13 | The characteristics of the pocket parks preferred by the respondents.                           | 92 |
| 4.14 | The recommendations for improving the pocket parks.   | 93 |

## LIST OF FIGURES

| Figure |   | Page |
|--------|---|------|
| 1.1    | An online article on propertyguru.com.my on the conversion of a green space into a building in Kuala Lumpur dated 7 March 2017.   | 5    |
| 1.2    | An online news report related to homelessness in an urban pocket park in the CCZ.   | 7    |
| 1.3    | Flowchart representing the organisation of this thesis.   | 12   |
| 2.1    | Parks and open spaces in Kuala Lumpur.  | 18   |
| 2.2    | Flow of information during the steps to identify articles for the systematic review of literature examining the usage of pocket parks from a socio-ecological approach. | 22   |
| 2.3    | The design principles of a good, small public park.   | 43   |
| 2.4    | A BERNAMA article on the pocket parks established in Kuala Lumpur CCZ.  | 48   |
| 2.5    | A SE-Model framework of the use of urban green space.   | 51   |
| 3.1    | The research design for this study.   | 54   |
| 3.2    | The location map of Kuala Lumpur.   | 56   |
| 3.3    | The location of the selected 10 pocket parks in the City Centre of Kuala Lumpur.  | 57   |
| 4.1    | The street-side Laman Tun Perak inspired by Malaysian rainforest.   | 67   |
| 4.2    | The Medan Pasar pocket park on normal weekdays and during the Fridays' bazaar.  | 68   |
| 4.3    | The distribution of the pocket park respondents.  | 74   |
| 4.4    | Respondents' motives for visiting the pocket parks in Kuala Lumpur.   | 82   |
| 5.1    | The list of recommendations to encourage greater use of the pocket parks among the urbanites in Kuala Lumpur.   | 97   |



## LIST OF ABBREVIATIONS

|          |   |
|----------|---|
| ANOVA    | Analysis of variance  |
| ART      | Attention Restoration Theory                                  |
| CCZ      | City Centre Zone  |
| CETDEM   | Centre for Environment, Technology and Development, Malaysia  |
| DBKL     | Kuala Lumpur City Hall or <i>Dewan Bandaraya Kuala Lumpur</i> |
| ETP      | Economic Transformation Programme, Malaysia                   |
| GTP      | Government Transformation Programme, Malaysia                 |
| NKEA     | National Key Economic Areas, Malaysia                         |
| NRPA     | National Recreation and Park Association, the United States   |
| POS      | Public open space   |
| QOL      | Quality of life   |
| RAND     | ‘Research and Development’ Corporation                        |
| SE-Model | Socio-Ecological Model  |
| SPSS     | Statistical Package for Social Sciences                       |
| SPUGS    | Small public urban green space                                |
| TCPD     | Town and Country Planning Department                          |
| UGS      | Urban green space   |
| UN       | United Nations  |
| UNFPA    | United Nations Population Fund                                |
| UNCHS    | United Nations Centre for Human Settlements                   |
| WHO      | World Health Organisation                                     |

# CHAPTER 1

## INTRODUCTION

### 1.1 Background to the Study

Pocket parks are also recognized as mini-parks or vest-pocket parks, as they are small urban open spaces (Blake, 2017). These parks were introduced as the main green space in dense city areas to benefit large number of urban dwellers in terms of environment, social and health benefits (Seymour, 1969; Peschardt, Schipperijn and Stigsdotter, 2012; Shirleyana, 2013; Shahhoseini and Maulan, 2015; Abd El Aziz, 2017; Mesimäki, Hauru and Lehvävirta, 2019). Although considered as a scaled-down neighbourhood park, Blake (2017) reported that these small parks can promote small gathering or casual meeting with friends as well as providing the space for relaxing, for having lunch and for children's active play. According to Seymour (1969), pocket parks could perform a practical recreational function as well as contributing to the preservation of the city as a suitable place for residential and commercial activities. Similarly Armato (2017) stated that those who have pocket parks close to their home particularly in cities that lack green outdoor spaces are certainly fortunate especially when for many years, pocket parks were scattered over the urban environment without proper context.

Recent studies have documented the benefit of pocket parks for socialising, rest and restitution (Peschardt et al., 2012; Peschardt, Stigsdotter and Schipperijn, 2016; Danford, Strohbach, Warren and Ryan, 2018); physical activities (Cohen et al., 2014); recreational and experiential potentials (Mesimäki et al., 2019) as well as restoration (Nordh, Hartig, Hagerhalla and Fry, 2009; Nordh, 2011; Peschardt and Stigsdotter, 2013; Duggal and Chib, 2014; Peschardt et al., 2016). Moreover, pocket parks were proven to contribute positively towards the urban microclimate (Lau et al., 2012; Lin, Lau and Gou, 2017; Park, Kim, Lee, Park and Jeong, 2017); and support urban biodiversity as well as the ecological function including the diversity of bird species in small parks (Jasmani, Ravn and van den Bosch, 2016).

More urban nature related studies had indicated that park vicinity and accessibility, the pattern of park use, qualitative factors such as the attractiveness of the natural elements including trees, grass and water features, as well as the variations of activities that can be conducted in the parks, are the key success factors for parks design and use (Jim, 2004; Wood et al., 2010; Sinou and Kenton, 2013; Haaland and van den Bosch, 2015). Accessibility and the time taken to access a public park often influences the level or frequency of use of the park (Grahn and Stigsdotter, 2003; Nielsen and Hansen, 2006; Neuvonen et al., 2007; Breuste and Rahimi, 2015).

Zube and Moore (1987), reported that during the last few decades, open spaces particularly public and neighborhood parks, play areas, as well as plazas have attracted significant research attention. Of these, public parks were the most frequently studied open spaces. Further to this, Peschardt et al. (2012) reported that research on small-scale urban green spaces or pocket parks are still limited. Similarly, Cheisura (2004) stated that not much attention has been paid to urban parks in cities, especially parks in the community where people live and work; and this includes small-scale green areas. Besides, most of the studies on pocket parks were conducted in temperate regions and did not address the benefits as well as the functionality of pocket parks in tropical countries.

As a tropical country, most of the cities in Malaysia have significant green areas. Nevertheless, due to industrialisation and urban growth, the role of urban green spaces in Malaysia has become more vital in contributing to the quality of life in urban environment (Aziz, 2012). Therefore, more recreational options are provided by integrating open spaces with green walkways and blue corridors as well as activating these areas with new functionality to attract not only tourist but locals and local residents, especially in the City Centre Zone (CCZ) of Kuala Lumpur, the capital city of Malaysia (Draft Kuala Lumpur Structure Plan 2040 (KLSP2040), DBKL, 2020). Moreover, like any other large cities, densification in Kuala Lumpur is inevitable (Nochian, 2015). Ibrahim, Md Dali and Che Haron (2016) also reported on the issues and problem in managing open spaces in Peninsular Malaysia. Their study highlighted the problems met by the local authorities in the administration of open spaces; and further suggested that extra attention needs to be given to the aspect of management to sustain these open spaces. Likewise, many governments are struggling to maintain the parks they already have, which makes the development of new parks nearly impossible (Harnik, 2008). Nevertheless, the 11<sup>th</sup> Malaysian Plan 2016-2020 has identified the development of good green open spaces as one of the strategies of the government to raise the living standards in the cities.

While the establishment of more good green open spaces are in the pipeline, it is important to understand the different views and preferences of parks users for an effective park design and to promote the parks usage (Sreetheran, 2010; Sakip, Akhir and Omar, 2015; Santiago, Gladkikh, Betancourt and Vargas, 2015; Paul and Nagendra, 2017; Nath, Han and Lechner, 2018). Furthermore, the established parks should cater to the multiracial community in Malaysia, mainly in an urban area (Sakip, Akhir and Omar, 2015).

According to Hoyle, Hitchmough and Jorgensen (2017), the design and optimal management of a public green infrastructure is strongly dependent upon the understanding toward the association between aesthetic experience, restorativeness and well-being, as well as the perceived and actual biodiversity. In Lee, Jordan and Horsley's study (as cited in Roberts, McEachan, Margary, Conner and Kellar, 2016), the beneficial health effects of green space is more likely the results of the usage and the activities conducted at the park rather than the presence of the park alone. On the other hand, Saw (2015) argued that neither the access nor the use of green space among Singaporeans significantly contributed to their well-being or health. This finding

contradicts the universality relationship between general well-being and the usage of urban environment from temperate regions.

Hence, this study aims to understand the functionality and constraints of use of open spaces in the capital of Malaysia, with particular interest on the urban pocket parks from the CCZ. Most of the pocket parks in Kuala Lumpur are located in the city centre. With the initiative to convert more spaces between building and downtown back lanes into public spaces such as open plazas and pocket park for attractions and for relaxation (KLSP2040, 2020), understanding the functionality and the constraints that limit the non-participation will contribute to improving the compatibility of the spaces for the urbanites in the CCZ. This study applied the socio-ecological model (SE-Model) as a research framework for analysing the functionality and usage of urban pocket parks.

## **1.2 Statement of Research Problems**

According to Seymour (1969), small urban green spaces or pocket parks were introduced to benefit citizen of all ages by promoting recreation, reset and relaxation. Despite this, limited studies have investigated the usage, benefit and users' perception towards small urban parks, particularly in the tropics. The usage and perception towards these parks are crucial since the park spaces are often overlooked and degraded for other land uses, mainly in the cities undergoing rapid urbanisation (Haaland and van den Bosch, 2015). Besides, there is inadequate number of open spaces such as plazas and smaller parks within the Kuala Lumpur CCZ district and neighbourhood areas to contribute to the city amenity (Kuala Lumpur Structure Plan 2020, Kuala Lumpur City Hall (Dewan Bandaraya Kuala Lumpur—DBKL), 2018); and the available parks are inadequately used due to cultural difference or other undesirable factors.

### **1.2.1 Limited Studies**

Most studies associated with pocket parks had particularly examined the usage pattern in American or European context (Nordh et al., 2009; Nordh et al., 2011; Peschardt et al., 2012; Nordh and Østby, 2013; Peschardt, and Stigsdotter, 2013; Peschardt et al., 2014; Peschardt, and Stigsdotter, 2014; Cohen et al., 2014; Lorenzo et al., 2016; Currie, 2016; Danford et al., 2018). However, limited research has investigated the usage, functionality and constraints associated with pocket parks, mainly in an Asian context. Besides, most of the available literatures on urban green spaces in Malaysia are associated how urban green space can enhance biodiversity (Karuppannan, Baharuddin, Sivam and Daniels, 2014), the usage pattern of urban parks (Sreetheran, 2017; Nurhayati and Amanina, 2018), the change in urban forest cover (Kanniah and Ho, 2017), crime-related fear in the Kuala Lumpur urban parks (Sreetheran and van den Bosch, 2015) as well as socioecological perspective towards the use and constraints of urban greenway (Pa Theeba Paneerchelvam et al., 2020). Several conference papers that were published recently emphasized on pocket parks through the open space categorisation using classification system (Nochian et al., 2015); introduced a method to assess small urban parks through social-ecological characteristics and factors

(Jasmani, Ravn and van den Bosch, 2015) and a case study on how the characteristics of small urban parks influence bird diversity (Jasmani et al., 2016). One paper was published recently on the restorative environment offered by a pocket park in Kuala Lumpur (Hashim et al., 2019). For that reason, this study proposes to gather data and information from 10 urban pocket parks in the CCZ of Kuala Lumpur by employing quantitative research method to identify the functionality and constraints of use of urban pocket parks in an Asian context.

### **1.2.2. Converted into Other Land Uses**

Despite the fact that the benefits of urban green spaces are progressively perceived in Malaysia, the country is still facing a big challenge on the provision of urban green spaces (Aziz, 2012). According to Teh (1989), significant urban areas like Kuala Lumpur and its surroundings, have seen dramatic land use changes caused by the establishment of commercial areas, including the overall conversion of forests and green space for development. Furthermore, the decline in public open space in the City Centre has been consistent mainly because of the land conversion for other uses (Kuala Lumpur Structure Plan 2020, 2018). The Kuala Lumpur City Plan 2020 (2009) reported that the loss of green areas, pollution, and general challenges to quality of life in Kuala Lumpur were contributed by amassed infill, density as well as encroachment. Unfortunately, pocket parks are also among the small public urban green susceptible to land use changes and often converted for other uses (Senior Assistant Director (Landscape), DBKL, pers. comm., 20 February 2018).

In the recent years, several online news portals have reported on the objections and enquiries regarding conversion of urban green spaces in Kuala Lumpur into other uses. One example is the conversion of a green space in Medan Imbi that was earlier proposed for the development of two pocket parks under the jurisdiction of DBKL into a building complex in 2017 as shown in Figure 1.1. Public intervention and user perception can contribute tremendously in planning, designing and supporting urban green spaces however, according to Kabisch, Qureshi and Haase (2015), the general understanding towards the interaction issues between humans and urban green space are still incomplete to provide the required orientation for urban planners. To help bridge the gap between the importance of urban pocket parks for the urbanites, with the development of more multifunctional green infrastructures in the Kuala Lumpur, this study will identify the urbanites' preferences towards the presence, use and functionality of urban pocket parks in the CCZ.



## MPs Bewildered By Mystery Building In Medan Imbi

• March 7, 2017



A mystery project now under construction on the former site of a park in Medan Imbi, Kuala Lumpur has earned the ire of several members of Parliament (MPs) and stakeholders, reported The Star.

This comes as the green space and playground was removed in October 2016 without Kuala Lumpur City Hall (DBKL) undergoing through the standard operating procedure of having a project notice or objection notice board at the site prior to construction.

"We do not know what the building is going to be used for," said Bukit Bintang MP Fung Kui Lun, who plan to raise the matter up in the next Parliament seating.

"Our enquiries and objection letters to DBKL have gone unanswered for more than six months... How can a green lung be sold off without an open tender or a development start without a public objection hearing?"

DBKL had announced in March 2016 plans to make the park a part of a community-oriented rejuvenation initiative.

Dubbed Signature Park Programme, the initiative was launched by DBKL with community-based urban rejuvenation organisation Think City Sdn Bhd at the junction of Jalan Khoo Teik Ee and Medan Imbi.

Proposed plans for the project included children's playground, seating area and elevated walkway.

Months later, people were surprised that the plans failed to materialise, and found a building under construction instead, said Fung.

Segambut MP Lim Lip Eng said a stop-work order should have been issued by DBKL upon receiving objection letters.

A Think City spokesman revealed that the organisation had submitted a proposal for two pocket parks to DBKL, which the latter supported in principle.

"That led to our first engagement session with the local community to get their feedback on the proposal, which is a key component of our community-centric approach to improving public spaces," said the spokesman.

"Since then, we were informed that a different direction would be taken so there was no further advancement made in this project."

*Image sourced from The Star*

*Radin Ghazali, Content Writer at PropertyGuru, edited this story. To contact her about this or other stories email [radin@propertyguru.com.my](mailto:radin@propertyguru.com.my)*

**Figure 1.1: An online article on propertyguru.com.my on the conversion of a green space into a building in Kuala Lumpur dated 7 March 2017.**

### 1.2.3 Undesirable Factors

The desire to be in contact with nature plays a crucial role in providing the prospects for physical activities and to fulfil the important immaterial human needs such as relaxation (Krieger et al., 2009; Wood, Hooper, Foster and Bull, 2017); restoration and health benefits (Kaplan et al., 1998; Lorenzo, Corraliza, Collado and Sevillano, 2015); as well as improving the neighbourhood quality of life (Currie, 2016). A study on the barriers to recreational participation identified 10 recreational barrier factors which include; time constraints, money, leisure facilities, family concern as well as lack of awareness, interests and social skills as leisure constraints (Henderson et al., 1988). In the CCZ of Kuala Lumpur, the increasing concern towards homelessness in parks indicates a strong and aptly example of conflict with the aesthetic benefits of the urban parks for the urbanites. The DBKL has revealed that an estimated number of 800 homeless individuals live in the CCZ in 2018 (KLSP2040, 2020). The heavy presence of homeless individuals on public parks was also reported in many communities including the United States (Rose, 2019). An online report regarding this conflict obtained from an online news portal is shown in Figure 1.2. Based on the report, the park was showing signs of decay and there is an ongoing concern regarding the prevalence of homeless individuals and migrant workers who lived in this park. Presumably the urban pocket parks in the CCZ of Kuala Lumpur are inadequately used due to cultural difference or the undesirable factors caused by the presence of the unsheltered homelessness forced to sleep, eat, and live in the urban parks; this study explore which factors deter the use of pocket parks among urbanites in the Kuala Lumpur CCZ. Moreover, it is important to know how and why urban dwellers interact with nature.



**Figure 1.2(a): An online news report related to homelessness in an urban pocket park in the CCZ.**



Tetapi hari ini, tempat yang popular satu ketika dahulu bukan sahaja telah rosak malah dijadikan tempat melepak penagih dadah dan juga mereka yang tiada tempat tinggal.

Terdapat juga para peniaga di situ yang mendakwa taman berkenaan kini sudah bertukar menjadi tempat melepak pekerja-pekerja warga asing.

Menurut salah seorang pekerja Alam Flora, Sirul Lokman berkata, warga asing menjadikan air pancut di situ sebagai tempat untuk mandi serta mencuci pakaian.

"Kita boleh lihat mereka mengeringkan pakaian yang dicuci di bangku-bangku berdekatan.

"Jika kamu lihat dengan lebih dekat lagi, mereka meninggalkan berus dan sabun yang tersorok di beberapa sudut di situ," katanya lagi.

Menurut Sirul, muncung panjang pada teko gangsa tersebut digunakan untuk menyembunyikan tikar alas tidur dan bekas yang dipenuhi dengan barangan keperluan harian mereka seperti sikat, kasut, dan selipar.

Penyelia bangunan yang bekerja berhampiran taman tersebut, Mohd Alif Subramaniam berkata, kawasan itu tidak lagi dipenuhi dengan pelancong tetapi dengan penagih dadah dan warga asing.

"Tiada lagi pelancong yang mahu berkunjung ke situ.

"Kawasan ini telah menjadi tempat lepak penagih dadah dan tempat tinggal bagi warga asing.

"Saya telah melihat banyak pergaduhan berlaku di sini termasuk di kalangan warga asing," katanya.

Seorang pengurus hotel yang mahu dikenali sebagai Jerica berkata, 'Ain Arabia' tidak lagi menarik perhatian pelancong Arab seperti dahulu.

"Dulu pelancong Arab sering melepak di kawasan ini tetapi sekarang tidak lagi. Tempat ini sekarang digunakan oleh mereka yang tidak mempunyai tempat tinggal serta beberapa warga asing untuk tidur pada waktu malam.

"Walaupun menjadikan kawasan tersebut sebagai tempat tinggal dan tempat tidur, mereka tidak pernah mengganggu ketenteraman pelancong yang menginap di hotel kami," kata Jerica.

StarMetro telah membuat tinjauan di kawasan tersebut minggu lalu dan terkejut apabila mendapati ia berada di dalam keadaan yang mengecewakan.

Ketika dibuka pada 2005, kawasan tersebut dipenuhi dengan rumput hijau yang subur dan laman tersebut menonjolkan seni bina Arab.

Di situ juga terdapat sebuah pokok beringin besar yang telah lama dipelihara oleh DBKL kerana usia dan keindahannya.

Hari ini, teko gangsa gergasi itu dipenuhi dengan sampah sarap dan tidak lagi mengeluarkan pancutan air.

Kawasan air pancut telah ditutup untuk mengelakkan orang ramai daripada mandi di situ tetapi masih ramai yang membuang sampah sarap dan puntung rokok ke dalamnya.

Apa yang lebih menyedihkan apabila pokok beringin lama itu kini telah menjadi tunggul kayu.

"Ia kelihatan kering apabila pihak DBKL mula mencurah simen ke tanah.

"Sungguh merugikan kerana ia adalah pokok yang cantik," kata Mohd Alif.

**Tags/Kata Kunci:**  
Ain Arabia, Bukit Bintang, DBKL

**Figure 1.2(b): An online news report related to homelessness in an urban pocket park in the CCZ (cont.).**

### **1.3 Research Aim and Objectives**

#### **Research Aim**

This research is aimed at investigating the functionality of the urban pocket parks in the CCZ of Kuala Lumpur and to identify the constraints that limit the usage of pocket parks among the urbanites.

#### **Research Objectives**

1. To investigate the functionality of the urban pocket parks among urbanites in the Kuala Lumpur CCZ.
2. To identify the constraints which deter the usage of pocket parks among urbanites in the Kuala Lumpur CCZ.
3. To provide recommendations to improve the usability pattern of the pocket parks in the Kuala Lumpur CCZ.

### **1.4 Research Questions**

#### **Main Research Questions**

What is the current usability pattern and constraints of using <sub>(how)</sub> pocket parks <sub>(what)</sub> in the Kuala Lumpur CCZ; and how it can be improved to encourage greater use among the urbanites <sub>(who)</sub>?

The following are the sub-research questions;

1. Who uses the pocket parks in Kuala Lumpur?
2. How are the pocket parks used?
3. What are the constraints that hinder the urbanites in Kuala Lumpur from using the pocket parks?
4. What are the characteristics of pocket parks preferred by the user in Kuala Lumpur?

## 1.5 Hypothesis

The usage of green space depends on the personal preferences of individuals towards nature. This study is designed with the assumption that the personal factor or demographic groups' preferences may impact how small urban green spaces are used. Therefore, the following assumptions form the basis of this study.

Null Hypothesis ( $H^0$ ): There are significant differences in pocket park usage within the different demographic groups.

Alternative Hypothesis ( $H^A$ ): There are no significant differences in pocket park usage within the different demographic groups.

## 1.6 Significance of the Study

According to Paul and Nagendra (2017), public and stakeholders' diversity of knowledge as well as the consideration towards the park users' viewpoint and preferences contributes effectively to the planning and management of urban nature. In the same vein, this research will contribute to the limited knowledge on users' perceptions of pocket parks in CCZ of Kuala Lumpur as well as the factors influencing the perceptions. The findings are expected to assist the local authority and park managers such as the DBKL to improve the characteristics of the pocket parks in Kuala Lumpur to ensure continuous use and its benefits to the urbanites. Although the provision for urban green space is described as the biggest challenge in compact city environment particularly during densification, this study will emphasize on the need to offset loss of urban green space with more small public green spaces in the CCZ of Kuala Lumpur. Additionally, the findings will contribute to the 'Urban Space, Nodes, Plazas and Parks Policy' under the Kuala Lumpur Structure Plan 2020 (DBKL, 2018) to further develop pocket parks and plazas in the CCZ as well as urban centres to green and provide places to relax in the city.

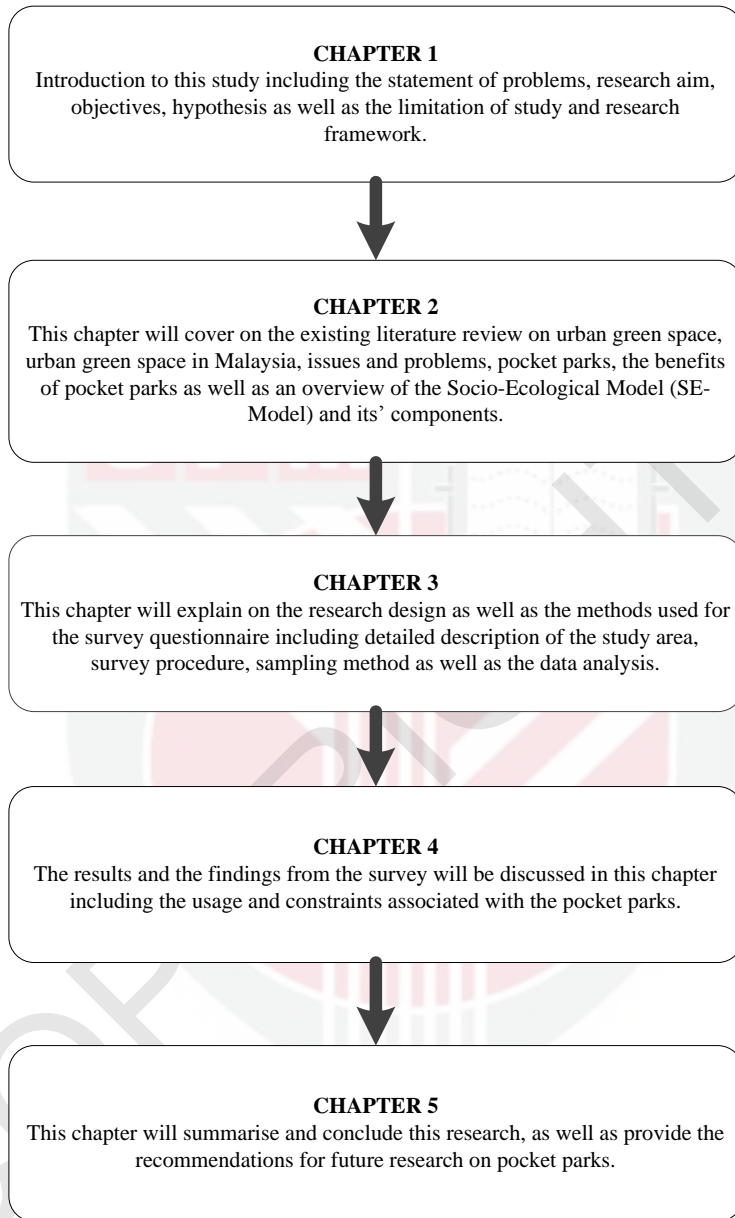
Besides, for the most parts, studies in the temperate region had examined on the pocket park usage (Nordh et al., 2009; Nordh et al., 2011; Peschardt et al., 2012; Nordh and Østby, 2013; Peschardt, and Stigsdotter, 2013; Peschardt et al., 2014; Peschardt, and Stigsdotter, 2014; Cohen et al., 2014; Lorenzo et al., 2016; Currie, 2016; Danford et al., 2018) limited research has investigated the usage and constraints of pocket parks among residents, mainly in an Asian context. Therefore, this study will fill this gap by understanding the usability pattern of pocket park and constraints associated with the use in a tropical context mainly among the diverse ethnicity community and environment in Kuala Lumpur.

## **1.7 Limitation of the Study**

The pocket parks in the CCZ of Kuala Lumpur are mostly inhabited by the homeless communities and migrant workers at nights. This restricts the number of park users and also raises safety concerns of park usage at late hours. The risk of visiting the park during the late hours limits the accessibility of the researcher to further investigate the functionality and constraints associated with the urban pocket parks usage at night. Therefore, study is only focused on the functionality and constraints associated with the urban pocket parks usage during the day time.

## **1.8 Organisation of the Study**

Figure 1.1 presents the flowchart that represents the organisation of this thesis. This thesis is organised into five (5) chapters; with a possible publication plan decided during the thesis writing. Chapter 1 consists of the introduction to this study including the statement of problem, research aim, objectives, hypothesis as well as the limitation of study and research framework. Chapter 2 covers the existing literature review on urban green spaces, the urban green space in Malaysia, issues and problems, pocket parks, the benefits of pocket parks as well as an overview of the Socio Ecological Model (SE-Model). The following chapter explains on the research design and the approaches considered for the data collection and analysis; including description and background of the study area. The results and the overall findings of the survey are discussed in Chapter 4; and this includes the functionality and constraints associated with pocket parks in the CCZ of Kuala Lumpur. The final chapter summarises and concludes this research thus providing recommendations for future research on the usage of pocket parks.



**Figure 1.3: Flowchart representing the organisation of this thesis.**

## REFERENCES

- Abd El Aziz, N. (2015). Potentials of creating pocket parks in high density residential neighbourhoods: The case of Rod El Farag, Cairo City. *International Journal of Development and Sustainability*, Volume 4 Number 7, 805-824.
- Abd El Aziz, N. (2017). Pocket Park Design in Informal Settlements in Cairo City, Egypt. *Landscape Architecture and Regional Planning* 2017; 2(2): 51-60, doi: 10.11648/j.larp.20170202.12.
- Adams, A., Harvey, H., & Brown, D. (2012). Constructs of health and environment inform child obesity prevention in American Indian communities. *Obesity* 16(2), 311-317.
- Ain Arabia Bukit Bintang Jadi 'Hotel' Penagih, Warga Asing. (2015, June 8). *mStar* (Rencana). Retrieved from <https://www.mstar.com.my>.
- Anderson, E.C., & Minor, E.S. (2017). Vacant lots: An underexplored resource for ecological and social benefits in cities. *Urban Forestry and Urban Greening*, 21, 146–152. <http://dx.doi.org/10.1016/j.ufug.2016.11.015>.
- Armato, F. (2017). Pocket Park: Product Urban design, *The Design Journal*, 20:sup1, S1869-S1878, DOI: 10.1080/14606925.2017.1352705.
- Aziz, N.A.A (2012): Green space use and management in Malaysia. *Forest and Landscape Research* No. 51-2012. Forest and Landscape Denmark, Frederiksberg. 127 pp.
- Backman, K.F., & Potts, T.D. (1993). *Profiling Nature-Based Travelers: Southeastern Market Segments*. South Carolina: Strom Thurmond Institute.
- Bateman, I., Carson, R. T., Day, B., Hanemann, M., Hanley, N., Hett, T., Jones-Lee, M., Loomes, G., Mourato, S., Ozdemiroglu, E., Pearce, D. W., Sugden, R. & Swanson, J. (2002). *Economic Valuation with Stated Preference Techniques*. Edward Elgar: Cheltenham, UK.
- Baur, J.W.R. & Tynon, J. F. (n.a.). Small Scale Urban Nature Parks: Why Should We Care?. *Urban Parks, Recreation, Social Capital and Networks* (pp. 1-12). Corvallis, OR: Peavy Hall.
- Berg B.L. (1989). *Qualitative research methods for the social sciences*. Allyn and Bacon. New York.
- Bernama. (2017, October 4). KL Pocket Parks visitors explore foot. *Astro Awani*. Retrieved from <http://english.astroawani.com>.
- Blake, A. (2017). *Pocket Parks*. Retrieved on 12 October 2017 from [www.researchgate.net](http://www.researchgate.net).

- Booth, M.L., Owen, N., Bauman, A., Clavisi, O. & Leslie, E. (2000). Social-cognitive and perceived environment influences associated with physical activity in older Australians. *Preventive Medicine*. Jul;31(1):15-22.
- Boyd, F., White, M.P., Bell, S.L., & Burt, J. (2018). Who doesn't visit natural environments for recreation and why: A population representative analysis of spatial, individual and temporal factors among adults in England. *Landscape and Urban Planning*, 175, 102–113.
- Brownson, R. C., Baker, E. A., Housemann, R. A., Brennan, L. K., & Bacak, S. J. (2001). Environmental and policy determinants of physical activity in the United States. *American Journal of Public Health*, 91(12), 1995–2003. <https://doi.org/10.2105/ajph.91.12.1995>.
- Bunnell, T., Barter, P.A., & Morshidi, S. (2002). City Profile: Kuala Lumpur metropolitan area, a globalizing city-region. *Cities*, Vol. 19, No. 5: 357–370.
- Burgess, J., Harrison, C.M., & Limb, M. (1988). People, parks and the urban green: a study of popular meanings and values for open spaces in the city. *Urban Studies*, 25, 455–473.
- Byrne, J., Wolch, J. & Zhang, J. (2009). Planning for environmental justice in an urban national park. *Journal of Environmental Planning and Management* 52, 365–392. <http://dx.doi.org/10.1080/09640560802703256>.
- Byrne, J. (2012). When green is White: the cultural politics of race, nature and social exclusion in a Los Angeles urban national park. *Geoforum* 43, 595–611.
- Carbó-Ramírez, P., & Zuria, I. (2011). The value of small urban greenspaces for birds in a Mexican city. *Landscape and Urban Planning*, 100, 213–222.
- Carnegie, M.A., Bauman, A., Marshall, A.L., Mohsin, M., Westley-Wise, V. & Booth, M.L. (2002). Perceptions of the physical environment, stage of change for physical activity, and walking among Australian adults. *Research Quarterly for Exercise and Sport*, 2002 Jun;73(2):146-55.
- Chiesura, A. (2004). The role of urban parks for the sustainable city. *Landscape and Urban Planning*, Volume 68, Issue 1, 129-138.
- City Hall Kuala Lumpur. (2018). *Kuala Lumpur Structure Plan 2020*. Retrieved from <http://pskl2020.dbkl.gov.my>.
- City Hall Kuala Lumpur. (2020). *Kuala Lumpur Structure Plan 2040*. Retrieved from <https://www.dbkl.gov.my/klmcity2040/klsp2040/>.
- Cohen, D. A., McKenzie, T. L., Sehgal, A., Williamson, S., Golinelli, D., and Lurie, N. (2007). Contribution of public parks to physical activity. *American Journal of Public Health*, 97, 509-514.
- Cohen, D.A., Setodji, C., Evenson, K.R., Ward, P., Lapham, S., Hillier, A., & McKenzie, T.L. (2011). How much observation is enough? Refining the



- administration of SOPARC. *Journal of Physical Activity & Health*, 8(8), 1117–1123. <https://doi.org/10.1123/jpah.8.8.1117>.
- Cohen, D. A., Marsh, T., Williamson, S., Han, B., Derose, K. P., Golinelli, D., & McKenzie, T. L. (2014). The potential for pocket parks to increase physical activity. *American Journal of Health Promotion: AJHP*, 28(3 Suppl), S19–S26. <https://doi.org/10.4278/ajhp.130430-QUAN-213>.
- Cook, S. D., Stewart, E., & Repass, K. (1992). *Discover America: Tourism and the Environment*. Washington, DC: Travel Industry Association of America.
- Coutts, A.M., Tapper, N.J., Beringer, J., Loughnan, M., & Demuzere, M. (2013). Watering our cities: The capacity for Water Sensitive Urban Design to support urban cooling and improve human thermal comfort in the Australian context. *Progress in Physical Geography*, 37(1), 2–28. <http://dx.doi.org/10.1177/0309133312461032>.
- Cox, D.T., and Gaston, K.J. (2018). Human–nature interactions and the consequences and drivers of provisioning wildlife. *Philosophical Transactions of the Royal Society B: Biological Sciences* 5;373(1745). pii: 20170092. doi: 10.1098/rstb.2017.0092.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Sage Publications, Inc.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Sage Publications, Inc.
- Creswell, J. W. (2014). *Research Design Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). Thousand Oaks, CA Sage.
- Creating Mini-Parks for Increased Physical Activity*. (2017). Issue Brief. National Recreation and Park Association,
- Currie, M.A. (2016): A design framework for small parks in ultraurban, metropolitan, suburban and small town settings. *Journal of Urban Design*. DOI: 10.1080/13574809.2016.1234334.
- Danford, R.S., Strohbach, M.W., Warren, P.S. & Ryan, R.L. (2018). Active Greening or Rewilding the city: How does the intention behind small pockets of urban green affect use? *Urban Forestry and Urban Greening* 29, 377–383.
- Davison, K.K. & Lawson, C.T. (2006). Do attributes in the physical environment influence children's physical activity? A review of the literature. *International Journal of Behavioral Nutrition and Physical Activity* 3, 19. <https://doi.org/10.1186/1479-5868-3-19>.
- de Bloom, J., Sianoja, M., Korpela, K., Tuomisto, M., Lilja, A., Geurts, S. & Kinnunen, U. (2017). Effects of park walks and relaxation exercises during lunch breaks on recovery from job stress: Two randomized controlled trials. *Journal of Environmental Psychology*, 51, 14-30.



- Department for Transport, Local Government and the Regions. (2002). *Improving Urban Parks, Play Areas and Green Spaces*. Urban Research Report. London: DTLR.
- Department of Statistics Malaysia. (2018). *Demographic Statistics: First Quarter (Q1) 2018, Malaysia*. Retrieved from <https://www.dosm.gov.my> on 30 July 2018.
- Department of Statistics Malaysia. (2019). *Migration Survey Report, Malaysia, 2018*. Retrieved from <https://www.dosm.gov.my> on 28 August 2019.
- Duggal, A., & Chib, A. (2014). The Role of Urban Green Spaces for the Sustainable City, Jammu (JandK). *PARIPEX - Indian Journal of Research*, Volume 3, Issue 6, 92-94.
- Fennell, D., & Smale, B. (1992). Ecotourism and Natural Resource Protection. *Tourism Recreation Research*, 17 (1): 21-32.
- Forsyth, A., L. Musacchio, L., & Fitzgerald, F. (2005). *Designing Small Parks. A Manual for Addressing Social and Ecological Concerns*. New Jersey: John Wiley and Sons Inc.
- Francesco, A. (2017). Pocket Park: Product Urban design. *The Design Journal*, 20:sup1, S1869-S1878, DOI: 10.1080/14606925.2017.1352705.
- Gartland, L. (2008). Heat Islands: Understanding and Mitigating Heat in Urban Areas. *Earthscan*.
- Ghavampour, E., Vale, B., Del Aguila, M.A. (2015). *Nature as a Design Element in Small Urban Public Spaces*. Paper presented at Future of Places, Stockholm.
- Gibson, S.C. (2018). "Let's go to the park." An investigation of older adults in Australia and their motivations for park visitation. *Landscape and Urban Planning*, 180, 234–246.
- Giles-Corti, B., & Donovan, R.J. (2002). Socioeconomic status differences in recreational physical activity levels and real and perceived access to a supportive physical environment. *Preventive Medicine* 35(6):601–611, PMID: 12460528, 10.1006/pmed.2002.1115.
- Giles-Corti, B., & Donovan, R.J. (2003). Relative influences of individual, social environmental, and physical environmental correlates of walking. *American Journal of Public Health* 93(9):1583–1589, PMID: 12948984, 10.2105/AJPH.93.9.1583.
- Giles-Corti, B., Broomhall, M. H., Knuiman, M., Collins, C., Douglas, K., Ng, K., & Donovan, R. J. (2005). Increasing walking: how important is distance to, attractiveness, and size of public open space? *American Journal of Preventive Medicine*, 28(2), 169-176.
- Gobster, P.H. (2002). Managing urban parks for a racially and ethnically diverse clientele. *Leisure Sciences*, 24, 143–159.

- Grahn, P. & Stigsdotter, U.A. (2003). Landscape planning and stress. *Urban Forestry and Urban Greening*, 2: 001–018.
- Grahn, P., & Stigsdotter, A. U. K. (2010). The relation between perceived sensory dimensions of urban green space and stress restoration. *Landscape and Urban Planning*, 94(3-4), 264-275. <https://doi.org/10.1016/j.landurbplan.2009.10.012>.
- Haaland, C., & van den Bosch, C.K. (2015). Challenges and strategies for urban green-space planning in cities undergoing densification: A review. *Urban Forestry and Urban Greening* 14, 760–771.
- Hartig, T., Korpela, K., Evans, T. P., & Gärling, T. (1996). Validation of a measure of perceived environmental restorativeness, No. 7. Göteborg Psychological Reports, *Göteborg Psychological Reports* 26.
- Hashim, N.I., Yusof, N.H.S., Anuar, A.N.A & Sulaiman, F.C. (2019). The restorative environment offered by pocket park at Laman Standard Chartered Kuala Lumpur. *Journal of Hotel and Business Management* 8:194. doi: 10.24105/2169-0286.8.194.
- Henderson, K.A., Stalnaker, D., & Taylor, G. (1988). The Relationship between Barriers to Recreation and Gender-Role Personality Traits for Women, *Journal of Leisure Research*, 20:1, 69-80, DOI: 10.1080/00222216.1988.11969758.
- Henderson, K.A. (1990). The Meaning of Leisure for Women: An Integrative Review of the Research, *Journal of Leisure Research*, 22:3, 228-243, DOI: 10.1080/00222216.1990.11969827.
- Henderson, P.M. & Butler, O.S. (1990). *Mission impossible: Difficult to interview population*. Paper presented at the annual conference of the American Association for Public Opinion Research, Lancaster, PA. May, 17-20.
- Hoyle, H., Hitchmough, J. & Jorgensen, A. (2017). All about the ‘wow factor’? The relationships between aesthetics, restorative effect and perceived biodiversity in designed urban planting. *Landscape and Urban Planning* 164 (2017) 109–123.
- Humpel, N., Owen, N., & Leslie, E. (2002). Environmental factors associated with adults’ participation in physical activity: a review. *American Journal of Preventive Medicine*. 22:3 (2002) 188-199.
- Ikin, K., Beaty, M., Lindenmayer, D., Knight, E., Fischer, J. & Manning, A. (2012). Pocket parks in a compact city: How do birds respond to increasing residential density? *Landscape Ecology*. 28. 10.1007/s10980-012-9811-7.
- Improving Urban Public Transport*. (2013). GTP Annual Report. pp 51-65. Retrieved from [https://www.pmo.gov.my/dokumenattached/news/files/Pemandu\\_GTP\\_AR2013\\_SPEAD\\_LOWRES\\_UPT.pdf](https://www.pmo.gov.my/dokumenattached/news/files/Pemandu_GTP_AR2013_SPEAD_LOWRES_UPT.pdf)

- Jackson, E.L. (1991). Special issue introduction: Leisure constraints/constrained leisure. *Leisure Sciences*, 13:4, 273-278, DOI: 10.1080/01490409109513144.
- James, P., Tzoulas, K., Adams, M. D., Barber, A., Box, J., Breuste, J., Elmqvist, T., Frith, M., Gordon, C., Greening, K. L., Handley, J., Haworth, S., Kazmierczak, A. E., Johnston, M., Korpela, K., Moretti, M., Niemelä, J., Pauleit, S., Roe, M. H., ... Ward Thompson, C. (2009). Towards an integrated understanding of green space in the European built environment. *Urban Forestry and Urban Greening*, 8(2), 65-75. <https://doi.org/10.1016/j.ufug.2009.02.001>
- Jasmani, Z., HP Ravn, H.P., & van den Bosch, C.C.K. (2016). Introducing a Method for Social-ecological Assessment of Small Urban Parks. 2nd AQoL2015Izmir, Turkey, 09-14 Dec. 2015 / *Environment Behaviour Proceedings Journal*, 1(2), 123-131.
- Jasmani, Z., Ravn, H.P., & van den Bosch, C.C.K. (2017). The influence of small urban parks characteristics on bird diversity: A case study of Petaling Jaya, Malaysia. *Urban ecosystems*, Volume 20, Issue 1, 227-243. DOI 10.1007/s11252-016-0584-7.
- Jay, M., & Schraml, U. (2009). Understanding the role of urban forests for migrants—uses, perception and integrative potential. *Urban Forestry and Urban Greening*, 8, 283-294.
- Jim, C.Y., & Chen, W.Y. (2006). Recreation-amenity use and contingent valuation of urban greenspaces in Guangzhou, China. *Landscape and Urban Planning*. 75, 81-96.
- Jinhee Jun, & Kyle, G.T. (2012). Gender Identity, Leisure Identity, and Leisure Participation, *Journal of Leisure Research*, 44:3, 353-378, DOI: 10.1080/00222216.2012.11950269.
- Kabisch, N., & Haase, D. (2013). Green spaces of European cities revisited for1990–2006. *Landscape and Urban Planning*, 110, 113–122.
- Kadam, P. & Bhalerao, S. (2010). Sample size calculation. *International Journal of Ayurveda Research*. 2010 Jan-Mar; 1(1): 55–57. doi: 10.4103/0974-7788.59946
- Kamba, A.N., Rahmat, R.A.O.K., & Ismail, A. (2007). Why do people use their cars: A case study in Malaysia. *Journal of Social Sciences*, 3 (3): 117–122.
- Kane, M.J. (1990). Female Involvement in Physical Recreation—Gender Role as a Constraint. *Journal of Physical Education, Recreation and Dance*, 61:1, 52-56, DOI: 10.1080/07303084.1990.10606414.
- Kanniah, K.D., & Ho, C.S. (2017). Urban forest cover change and sustainability of Malaysian cities. *Chemical Engineering Transactions*, 56, 673-678. DOI:10.3303/CET1756113.

- Kaplan, R. (1981). Evaluation of an urban vest-pocket park. *U.S. Department of Agriculture Forest Service, Research Paper NC-195*, 12 p. U.S. Department of Agriculture Forest Service, North Central Forest Experiment Station, St. Paul, Minnesota.
- Kaplan, S. (1984). Affect and Cognition in the Context of Home: The Quest for Intangibles. *Population and Environment*, Volume 7, Issue 2, pp 126–133.
- Kaplan, R. & Kaplan S. (1989). *The experience of nature: A psychological perspective*. Cambridge University Press, Cambridge, UK.
- Kaplan, R. (1993). The role of nature in the context of the workplace. *Landscape and Urban Planning* 26, 193-201.
- Kaplan, R., Kaplan, S., & Ryan, R.L., (1998). *With People in Mind: Design and Management of Everyday Nature*. Island Press, Washington, DC.
- Karuppannan, S., Baharuddin, Z.M., Sivam, A., & Daniels, C.B. (2014). Urban Green Space and Urban Biodiversity: Kuala Lumpur, Malaysia. *Journal of Sustainable Development*, Vol. 7, No. 1.
- Kaur, A. (2008). *International migration and governance in Malaysia: policy and performance*. UNEAC Asia Papers No. 22.
- Kim, D., & Jin, J. (2018). Does happiness data say urban parks are worth it? *Landscape and Urban Planning*, 178, 1–11.
- Knobloch, K., Yoon, U., & Vogt, P.M. (2011). Preferred reporting items for systematic reviews and meta-analyses (PRISMA) statement and publication bias. *Journal of cranio-maxillo-facial surgery: Official Publication of the European Association for Cranio-Maxillo-Facial Surgery*, 39(2), 91–92. <https://doi.org/10.1016/j.jcms.2010.11.001>.
- Konijnendijk, C.C., Annerstedt, M., Nielsen, A.B., & Sreetheran, M. (2013). *Benefits of Urban Parks. A systematic review*. A Report for IFPRA. Copenhagen & Alnarp, January 2013.
- Koskela, H., & Pain, R. (2000). Revisiting fear and place: women's fear of attack and the built environment. *Geoforum*, 31, 269–280.
- Kozlowski, M., Norsidah Ujang & Suhardi Maulan. (2015). Performance of Public Spaces in the Kuala Lumpur Metropolitan Region in terms of the tropical climate. *Alam Cipta* Vol 8 (Special Issue 1) December 2015.
- Krippendorff, K. (1980). *Content analysis: an introduction to its methodology*. Sage, Beverly Hills, CA.
- Kweon, B.S., Marans, R.W., & Yi, C.W. (2016). Parks and Quality of Life: Differences among African American and White Residents. *Landscape Journal* 35, 97–108. <http://dx.doi.org/10.3368/lj.35.1.97>.

- Lam, K.C., Ng, S.L., Hui, W.C., & Chan, P.K. (2005). Environmental quality of urban parks and open spaces in Hong Kong. *Environmental Monitoring and Assessment* 1, 55–74.
- Lamarque, P., Quetier, F., & Lavorel, S. (2011). The diversity of the ecosystem services concept and its implications for their assessment and management. *Comptes Rendus Biologies*, 10.1016/j.crv.2010.11.007.
- Larson L.R., Jennings V., & Cloutier, S.A. (2016). Public Parks and Wellbeing in Urban Areas of the United States. *PLoS ONE* 11(4): e0153211. doi:10.1371/journal.pone.0153211.
- Lau, S.S., Lin, P., & Qin, H. (2012). A preliminary study on environmental performances of pocket parks in high-rise and high-density urban context in Hong Kong. *International Journal of Low-Carbon Technologies*, Vol. 7, Issue 3:215–225, <https://doi.org/10.1093/ijlct/cts033>.
- Lee, A.C.K. & Maheswaran, R. (2010). The health benefits of urban green spaces: a review of the evidence. *Journal of Public Health*, Vol. 33, No. 2, pp. 212–222. doi:10.1093/pubmed/fdq068.
- Liberati A., Altman D.G., Tetzlaff J., Mulrow C., Gøtzsche P.C., Ioannidis J.P.A., et al. for the PRISMA Group. (2009) The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. *BMJ*2009;339:b2700.
- Lin, B.B., Fuller, R.A., Bush, R., Gaston, K.J. & Shanahan, D.F. (2014). Opportunity or Orientation? Who Uses Urban Parks and Why. *PLoS ONE* 9(1): e87422. <https://doi.org/10.1371/journal.pone.0087422>.
- Lin, P., Lau, S.S., Qin H., & Gou, Z. (2017). Effects of urban planning indicators on urban heat island: a case study of pocket parks in high-rise high-density environment. *Landscape and Urban Planning* 168 (2017) 48–60.
- Lindall, P.J. & Hartig, T. (2015). Effects of urban street vegetation on judgments of restoration likelihood. *Urban Forestry and Urban Greening*, 2 (14), 200–209. <https://doi.org/10.1016/j.ufug.2015.02.001>.
- Lindsay, G., & Morhayim, L. (2015). *Revisiting "Social Factors": Advancing Research into People and Place*. Cambridge Scholars Publishing.
- Lloyd, K., Burden, J. & Kiewa, J. (2008). Young girls and urban parks: Planning for transition through adolescence. *Journal of Park and Recreation Administration*, 26(3), 21-38.
- Lo, A.Y.H., & Jim, C.Y. (2010). Differential community effects on perception and use of urban greenspaces. *Cities* 27, 430–442.
- Lorenzo, E., Corraliza, J.A., Collado, S., & Sevillano, V. (2016). Preference, restorativeness and perceived environmental quality of small urban spaces.



- Lottrup, L., Stigsdotter, U.K., Meilby, H., & Corazon, S.S. (2012). Associations between use, activities and characteristics of the outdoor environment at workplaces. *Urban Forestry and Urban Greening* 11, 159–168.
- Loukaitou-Sideris, A. (1995). Urban form and context: cultural differentiation in the uses of urban parks. *Journal of Planning Education and Research*, 14, 89–102.
- Louv, Richard. (2005). *Last Child in the Woods: Saving our Children from Nature Deficit Disorder*. Chapel Hill, NC: Algonquin Books.
- Maas, J., Spreeuwenberg, P., Van Winsum-Westra, M., Verheij, R.A.M., deVries, S., & Groenewegen, P.P. (2009). Is green space in the living environment associated with people's feelings of social safety? *Environment and Planning, A* 41, 1763–1777.
- MacNaghten, P. & Urry, J. (2000). Bodies in the woods. *Body and Society* 6, 166–182.
- Mak, B.K.L. & Jim, C.Y. (2018). Examining fear-evoking factors in urban parks in Hong Kong. *Landscape and Urban Planning*, 171, 42–56.
- From 'Bangkok Bank Bus Stop' to Library with No Rules. (2018, March 12). *MalayMail*. Retrieved from <http://epaper.mmail.com.my/2018/03/12/from-bangkok-bank-bus-stop-to-library-with-no-rules/>.
- Maller, C., Townsend, M., Pryor, A., Brown, P. & St Leger, L. (2005). Healthy nature healthy people: 'contact with nature' as an upstream health promotion intervention for populations. *Health Promotion International*, Vol. 21 No. 1 doi:10.1093/heapro/dai032.
- Marcus, C.C. & Francis, C. A. (1998). *People Places: Design Guidelines for Urban Open Space*, John Wiley and Sons, New York.
- McKenzie T.L., Cohen D.A., Sehgal A., Williamson S., & Golinelli D. (2006). System for Observing Parks and Recreation in Communities (SOPARC): reliability and feasibility measures. *Journal of Physical Activity and Health*, 3(suppl 1):S208–S222.
- McNeill, L.H., Kreuter, M.W., & Subramanian, S.V. (2006). Social Environment and Physical activity: A review of concepts and evidence. *Social Science and Medicine*. Volume 63, Issue 4: 1011-1022.
- Mehtälä, M.A.K., Sääkslahti, A.K., Inkinen, M.E., & Poskiparta, M.E.H. (2014). A socio-ecological approach to physical activity interventions in childcare: a systematic review. *International Journal of Behavioural Nutrition and Physical Activity*, 11:22. <http://www.ijbnpa.org/content/11/1/22>.

- Mesimäki, M., Hauru, K., & Lehvävirta, S. (2019). Do small green roofs have the possibility to offer recreational and experiential benefits in a dense urban area? A case study in Helsinki, Finland. *Urban Forestry and Urban Greening* 40 (2019) 114–124.
- Mitra, A., & Lankford, S. (1999). *Research methods in park, recreation, and leisure services*. Champaign, IL: Sagamore Pub.
- Mohd Hisyam Rasidi, Nurzuliza Jamirsah, & Ismail Said. (2012). Urban Green Space Design Affects Urban Residents' Social Interaction. *Procedia - Social and Behavioral Sciences*, 68, 464 – 480.
- Mowen, A.J., & Confer, J.J. (2003). The relationship between perceptions, distance, and socio-demographic characteristics upon public use of an urban park “in-fill”. *Journal of Park and Recreation Administration*, 21, 58–74.
- Mowen, A.J., Payne, L.L., & Scott, D. (2005). Change and Stability in Park Visitation Constraints Revisited. *Leisure Sciences*, 27: 191–204.
- Mullick, A. (1993). Accessibility issues in park design: The National Parks. *Landscape and Urban Planning*, 26, 25–33.
- National Recreation and Park Association. *Creating Mini-Parks for Increased Physical Activity*. Retrieved 12 October 2017 from <http://www.nrpa.org> on.
- Nechyba, T.J., & Walsh, R.P. (2004). Urban Sprawl. *Journal of Economic Perspective*, Volume 18 (4), 177–200.
- Neuvonen M., Sievänen T., Tönnies S., & Koskela T. (2007). Access to green areas and the frequency of visits - A case study in Helsinki. *Urban Forestry and Urban Greening*, 6:235–247.
- Newman, O. (1972). *Defensible space: Crime prevention through urban design*. New York: Macmillan.
- Nielsen, T.S., & Hansen, K.B. (2006). Nearby nature and green areas encourage outdoor activities and decrease mental stress. CAB reviews: perspectives in agriculture, veterinary science. *Nutrition and Natural Resources* 1, 059.
- Nochian, A., Tahir, O.M., Maulan, S.B., & Rakhshandehroo, M. (2015). A Comprehensive Public Open Space Categorization Using Classification System for Sustainable Development of Public Open Spaces. *Alam Cipta* Vol 8 (Special Issue 1).
- Nor Zalina, H., Khalilah Z., Mazlina M., & Khairunnisa Z. (2014). Determining Attributes of Urban Plaza for Social Sustainability. *Procedia - Social and Behavioural Sciences* 153 (2014) 606 – 615.
- Nordh, H., Hartig, T., Hagerhall, C.M., & Fry, G. (2009). Components of small urban parks that predict the possibility for restoration. *Urban Forestry and Urban Greening*, Volume 8 Issue 4, 225-235.

- Nordh, H., Alalouch, C., & Hartig, T. (2011). Assessing restorative components of small urban parks using conjoint methodology. *Urban Forestry and Urban Greening*, 10, 95-103.
- Nordh, H., & Ostby, K. (2013). Pocket parks for people—A study of park design and use. *Urban Forestry and Urban Greening*, Volume 12, Issue 1, 12-17.
- Nurhayati A.M., & Amanina N. (2018). Use Pattern and Activities: The Evaluation of Malaysian Green Open Space Design. *Planning Malaysia: Journal of the Malaysian Institute of Planners*, Volume 16 Issue 3, 121 – 131.
- Oke, T. R. (1987). *Boundary layer climate* (2nd ed.). London: Methuen.
- Owen, N., Humpel, N., Leslie, E., Bauman, A. & Sallis, J.F. (2004). Understanding Environmental Influences on Walking: Review and Research Agenda. *American Journal of Preventive Medicine* 2004;27(1), 67-76.
- Özgüner, H. (2011). Cultural differences in attitudes towards urban parks and greenspaces. *Landscape Research* 36, 599–620.
- Pan, S. Y., Cameron, C., Desmeules, M., Morrison, H., Craig, C. L., & Jiang, X. (2009). Individual, social, environmental, and physical environmental correlates with physical activity among Canadians: a cross-sectional study. *BMC Public Health*, 9, 21. <https://doi.org/10.1186/1471-2458-9-21>
- Pa Theeba Paneerchelvam, Sreetheran Maruthaveeran, Suhardi Maulan, & Shureen Faris Abd. Shukor. (2020). The use and associated constraints of urban greenway from a socioecological perspective: A systematic review. *Urban Forestry and Urban Greening* 47, 126508. doi.10.1016/j.ufug.2019.126508.
- Park, J., Kim, J.H., Lee, D., Park, C.Y., & Jeong, S.G. (2017). The influence of small green space type and structure at the street level on urban heat island mitigation. *Urban Forestry and Urban Greening*, Volume 21:203-212.
- Paul, S. & Nagendra, H. (2017). Factors Influencing Perceptions and Use of Urban Nature: Surveys of Park Visitors in Delhi. *Land* 2017, 6, 27; doi:10.3390/land6020027.
- Peng, S., Piao, S., Ciais, P., Friedlingstein, P., Ottle, C., Bréon, F.-M., Nan, H., Zhou, L., & Myneni, R.B., (2012). Surface urban heat island across 419 global big cities. *Environmental Science and Technology* 46, 696–703, <http://dx.doi.org/10.1021/es2030438>.
- Peschardt, K.K., Schipperjin, J., & Stigsdotter, U.K. (2012). Use of small public urban green spaces (SPUGS). *Urban Forestry and Urban Greening*, 11(3), 235-244.
- Peschardt, K.K., & Stigsdotter, U.K. (2013). Association between park characteristic and perceived restorativeness of small public urban green spaces. *Landscape and Urban Planning*, Volume 112, 26-39.



- Pescharadt, K.K., & Stigsdotter, U.K. (2014). Evidence for Designing Health Promoting Pocket Parks. *International Journal of Architectural Research* (Archnet-IJAR), Volume 8- Issue 3, 149-164.
- Pescharadt, K.K., Stigsdotter, U.K., & Schipperjin, J. (2014). Identifying features of pocket parks that may be related to health promoting use. *Landscape Research*, Volume 41, 2016 – Issue 1, 79-94.
- Peters, B.E., & Buijs, A. (2010). Social interactions in urban parks: stimulating social cohesion? *Urban Forestry and Urban Greening*, 9, 93–100.
- Pretty, J. (2017). Manifesto for the green mind. *Resurgence and Ecologist*, 301, 18–21.
- Radin Ghazali. (2017, March 7). MPs Bewildered by Mystery Building in Medan Imbi. *PropertyGuru*. Retrieved from <https://www.propertyguru.com.my>.
- Rakhshandehroo & Mohd Yusof (2015). Establishing New Urban Green Spaces Classification for Malaysian Cities. Paper presented at IFLA 2014 Asia Pacific Congress, Kuching, Malaysia. doi: 10.13140/RG.2.1.3912.6880
- Richards, D.R., Passy, P.B., & Oh, R.R. (2017). Impacts of population density and wealth on the quantity and structure of urban green space in tropical Southeast Asia. *Landscape and Urban Planning*, 157, 553–560.
- Rigolon A. (2017). Parks and young people: An environmental justice study of park proximity, acreage, and quality in Denver, Colorado. *Landscape and Urban Planning* 165, 73–83.
- Roovers, P., Hermy, M., & Gulinck, H. (2002). Visitor profile, perceptions and expectations in forests from a gradient of increasing urbanisation in central Belgium. *Landscape and Urban Planning*, 59, 129–145.
- Rose, J. (2019). Unsheltered Homelessness in Urban Parks: Perspectives on Environment, Health, and Justice in Salt Lake City, Utah. *Environmental Justice*, Vol. 12, No.1, 12-16. <http://doi.org/10.1089/env.2018.0023>.
- Rupprecht, C.D.D., Byrne, J.A., Garden, J.G., & Hero, J. (2015). Informal urban green space: A trilingual systematic review of its role for biodiversity and trends in the literature. *Urban Forestry and Urban Greening* 14, 883–908.
- Sakip, S., Akhir, N., & Omar, S. (2015). Determinant Factors of Successful Public Parks in Malaysia. *Procedia - Social and Behavioral Sciences*, 170. doi: 10.1016/j.sbspro.2015.01.003.
- Salina Mohamed Ali & Abdul Hadi Nawawi. (2006). Factors that Influence Users' Satisfaction on Urban Park. *Built Environmental Journal*. Vol. 3, No. 2, 42-57, 2006.
- Sallis, J. & Owen, N. *Physical activity and behavioural medicine*. London: Sage Publications, 1999.

- Sanesi, G., & Chiarello, F. (2006). Residents and urban green spaces: The case of Bari. *Urban Forestry and Urban Greening*, 4, 125–134.
- Schipperijn, J., Ekholm, O., Stigsdotter, U., Toftager, M., Bentsen, P., Kamper-Jørgensen, F. & Randrup, T. (2010). Factors influencing the use of green space: Results from a Danish national representative survey. *Landscape and Urban Planning*, 95, 130-137. 10.1016/j.landurbplan.2009.12.010.
- Scott, D., & Munson, W. (1994). Perceived constraints to park usage among individuals with low income. *Journal of Park and Recreation Administration*, Volume 12(4), 79-96.
- Seymour Jr., W.N. (1969). *Small Urban Spaces: The Philosophy, Design, Sociology and Politics of Vest-Pocket Parks and Other Small Urban Spaces*. New York University Press, New York.
- Shahhosseini, H., Kamal, M., & Maulan, S. (2015). Visual preferences of small urban parks based on spatial configuration of place. *International Journal of Architectural Engineering and Urban Planning*, Vol. 25, No. 2, 84-93.
- Shalini Ravindran. (2017, May 23). Tun Perak pocket park to be oasis for KL folk. *The Star* (Metro). Retrieved from <https://www.thestar.com.my>.
- Shashua-Bar, L., & Hoffman, M. (2000). Vegetation as a climatic component in the design of an urban street: An empirical model for predicting the cooling effect of urban green areas with trees. *Energy and Buildings*, 31(3), 221–235.
- Shinew, K.J., Stodolska, M., Floyd, M., Hibbler, D., Allison, M., Johnson, C., & Santos, C. (2006). Race and ethnicity in leisure behavior: where have we been and where do we need to go? *Leisure Sciences*, 28, 403–408.
- Shirleyana, S. (2013). The Possibility of Converting Available Spaces into Pocket Parks in Urban Settlements in Indonesia. *Jurnal Eco-Teknologi UWIKA (eJETU)*. ISSN: 2301-850X. Vol. I, Issue 1, 1-6.
- Sinou, M., & Kenton, A.G. (2013). *Parameters contributing to the design of a successful urban pocket park*. PLEA2013 - 29th Conference, Sustainable Architecture for a Renewable Future, Munich, Germany 10-12 September 2013.
- Sommer, B., & Sommer, R. (1991). *A practical guide to behavioral research: Tools and techniques* (3rd ed.). New York, NY, US: Oxford University Press.
- Sreetheran, M., & van den Bosch, C.C.K. (2014). A socio-ecological exploration of fear of crime in urban green spaces –A systematic review. *Urban Forestry and Urban Greening*, 13, 1–18.
- Sreetheran, M., & van den Bosh, C.K. (2015). Fear of crime in urban parks – What the residents of Kuala Lumpur have to say? *Urban Forestry and Urban Greening* 14, 702–713.

- Sreetheran, M. (2017). Exploring the urban park use, preference and behaviours among the residents of Kuala Lumpur, Malaysia. *Urban Forestry and Urban Greening*, 25, 85–93.
- Staats, H., & Hartig, T. (2004). Alone or with a friend: A social context for psychological restoration and environmental preferences. *Journal of Environmental Psychology*, 24(2), 199–211. <http://dx.doi.org/10.1016/j.jenvp.2003.12.005>.
- Stamps, A.E. (1999). Demographic effects in environmental aesthetics: a meta-analysis. *Journal of Planning Literature*, 155–175.
- Statswork. (2015). Research Design: The study adopted survey and correlational design for this quantitative study. Retrieved from <http://www.statswork.com/insights/sample-work/research-planning-sample-work/research-design/>.
- Stokols, D. (1996). Translating socio-ecological theory into guidelines for community health promotion. *American Journal of Health Promotion*, 10:282–298.
- Strohbach, M.W., Lerman, S.B., & Warren, P.S. (2013). Are small greening areas enhancing bird diversity? Insights from community-driven greening projects in Boston. *Landscape and Urban Planning*, Vol. 114:69-79.
- Sugiyama, T., Leslie, E., Giles-Corti, B. & Owen, N. (2008). Associations of neighbourhood greenness with physical and mental health: do walking, social coherence and local social interaction explain the relationships? *Journal of Epidemiol Community Health* 2008;62:e9. DOI:10.1136/jech.2007.064287.
- Sugiyama, T., & Thompson, C.W. (2008). Associations between characteristics of neighbourhood open space and older people's walking. *Urban Forestry and Urban Greening* 7(1):41-51. DOI: 10.1016/j.ufug.2007.12.002.
- Swamy, S. & Devy, S. (2010). Forests, heritage green spaces, and neighbourhood parks: Citizen's attitude and perception towards ecosystem services in Bengaluru. *Journal of Resources, Energy, and Development* Vol. 7, 117–122.
- Syed Arabi Idid. (1992). Specifying a target population. The case of the Malaysian public relations practitioners. *Jurnal Komunikasi*, Vol. 8. pp 131-140.
- Taylor, L., & Hochuli, D.F. (2017). Defining greenspace: Multiple uses across multiple disciplines. *Landscape and Urban Planning* 158, 25–38.
- Teh, T.S. 1989. An inventory of greenspace in the Federal Territory of Kuala Lumpur. *Malaysian Journal of Tropical Geography* 20, 50–64.
- Tian, Y., & Jim, C.Y. (2012). Development potential of sky garden in the compact city of Hong Kong. *Urban Forestry and Urban Greening*, 11(3):223-233.
- Torrente, P., Kinnunen, U., Sianoja, M., de Bloom, J., Korpela, K., Tuomisto, M.T. & Lindfors, P. (2017). The Effects of Relaxation Exercises and Park Walks

- During Workplace Lunch Breaks on Physiological Recovery. *Scandinavian Journal of Work and Organizational Psychology*, 2(1), p.2. DOI: <http://doi.org/10.16993/sjwop.19>.
- Tourism Research Group (1988). *Adventure Travel in Canada <A7> Western Canada Product Development Strategy*. Ottawa: Tourism Canada.
- Town and Country Planning Act 1976* [Act 172]. Incorporating all amendments up to 1 January 2006. Laws of Malaysia. Percetakan Nasional Malaysia Bhd.
- Tyrväinen, L., Mäkinen, K., & Schipperijn, J. (2007). Tools for mapping social values of urban woodlands and other green areas. *Landscape and Urban Planning*, 79, 5–19.
- Tyson, S. (2014). Experiments in Responsibility: Pocket Parks, Radical Anti-Violence Work, and the Social Ontology of Safety. *Radical Philosophy Review*. DOI: 10.5840/radphilrev201471820.
- Ulrich, R.S., Simons, R.F., Losito, B.D., Fiorito, E., Miles, M.A., & Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology* 11, 201–230.
- UNFPA. (2011). *State of World Population 2011: People and possibilities on a world of 7 billion*. Information and External Relations Division of UNFPA, the United Nations Population Fund. Retrieved 11 June 2019 from [www.unfpa.org](http://www.unfpa.org).
- United Nations: Department of Economic and Social Affairs. (2014). *68% of the world population projected to live in urban areas by 2050, says UN*. Retrieved 11 June 2019 from <https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html>.
- Van Herzele, A. & Wiedemann, T. (2003). A monitoring tool for the provision of accessible and attractive urban green spaces. *Landscape and Urban Planning*, 63 (2003) 109–126.
- Veitch, J., Bagley, S., Ball, K., & Salmon, J. (2006). Where do children usually play? A qualitative study of parents' perceptions of influences on children's active free-play. *Health and Place*, 12, 383-393.
- Vijenthil Nair. (2015, June 15). DBKL urges private sector to adopt city's green spaces. *The Star (Metro)*. Retrieved from <https://www.thestar.com.my>.
- Walker, S. E., & Duffield, B. S. (1983). Urban parks and open spaces - an overview. *Landscape Research*, Vol. 8, (No. 2), pp. 2-12.
- Wan Azlina Wan Ismail & Ismail Said. (2015). Integrating the Community in Urban Design and Planning of Public Spaces: A review in Malaysian cities. *Procedia - Social and Behavioral Sciences*, 168, 357 – 364.

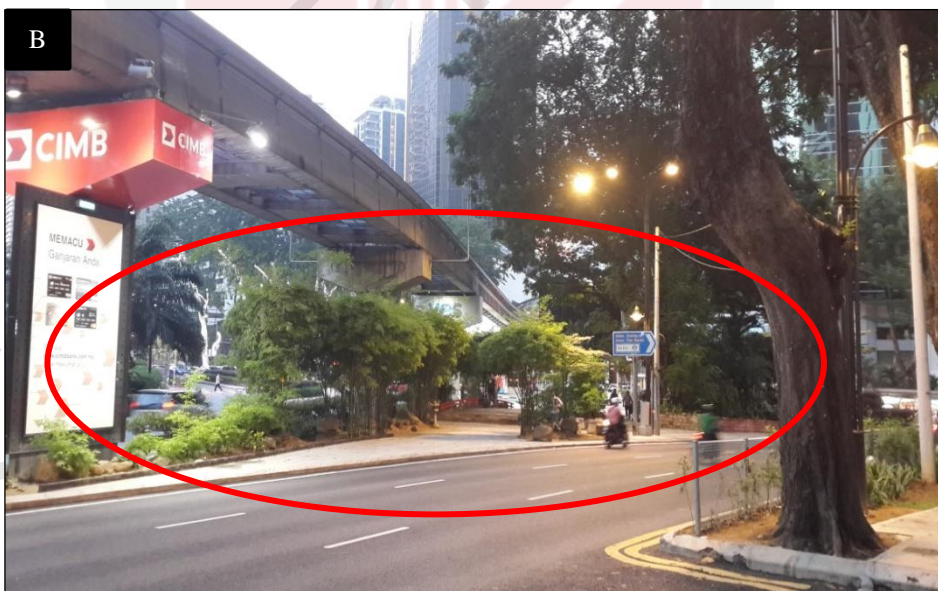
- Wang, J., Huang, B., Fu, D. & Atkinson, P. (2015). Spatiotemporal variation in surface urban heat island intensity and associated determinants across major Chinese cities. *Remote Sensing* 7, 3670–3689, <http://dx.doi.org/10.3390/rs70403670>.
- Ward-Thompson, C., Roe, J., Aspinall, P., Mitchell, R., Clow, A., & Miller, D. (2012). More green space is linked to less stress in deprived communities: evidence from salivary cortisol patterns. *Landscape and Urban Planning*, 105, 221–229.
- Wight, P.A. (1996). North American Ecotourists: Market Profile and Trip Characteristics. *Journal of Travel Research*, 34(4):2-10. DOI: 10.1177/004728759603400401.
- Williams, S. (1995). *Outdoor recreation and the urban environment*. London: Routledge.
- Wong, K.K. (2009). Urban park visiting habits and leisure activities of residents in Hong Kong, China. *Managing Leisure* 14, 125–140.
- Wood, L., Hooper, P., Foster, S., & Bull, F. (2017). Public green spaces and positive mental health – investigating the relationship between access, quantity and types of parks and mental wellbeing. *Health & Place* 48 (2017) 63–71.
- Wright Wendel, H.E., Zarger, R.K., and Mihelcic, J.R. (2012). Accessibility and usability: green space preferences, perceptions and barriers in a rapid urbanizing city in Latin America. *Landscape and Urban Planning*, 107 (2012) 272–282.
- Xie B., An, Z., Zheng, Y., & Li, Z. (2018). Healthy aging with parks: Association between park accessibility and the health status of older adults in urban China. *Sustainable Cities and Society* 43, 476–486.
- Yan Piaw, C. (2012). *Mastering Research Methods*. Shah Alam, Malaysia: McGraw-Hill Education.
- Yin, R.K. (2011). *Qualitative Research from Start to Finish*. The Guilford Press, New York.
- Zakaria, J., & Norsidah Ujang, N. (2015). Comfort of Walking in the City Center of Kuala Lumpur. AcE-Bs2014, Seoul Asian Conference on Environment-Behaviour Studies Chung-Ang University, Seoul, S. Korea, 25-27 August 2014 "Environmental Settings in the Era of Urban Regeneration". *Procedia - Social and Behavioral Sciences* 170, 642–652. doi: 10.1016/j.sbspro.2015.01.066.
- Zube, H.E., & Moore, G.T. (ed). (1987). *Advances in environment, Behavior, Design*. Volume 1. © Springer Science + Business Media New York. New York, p. 77.



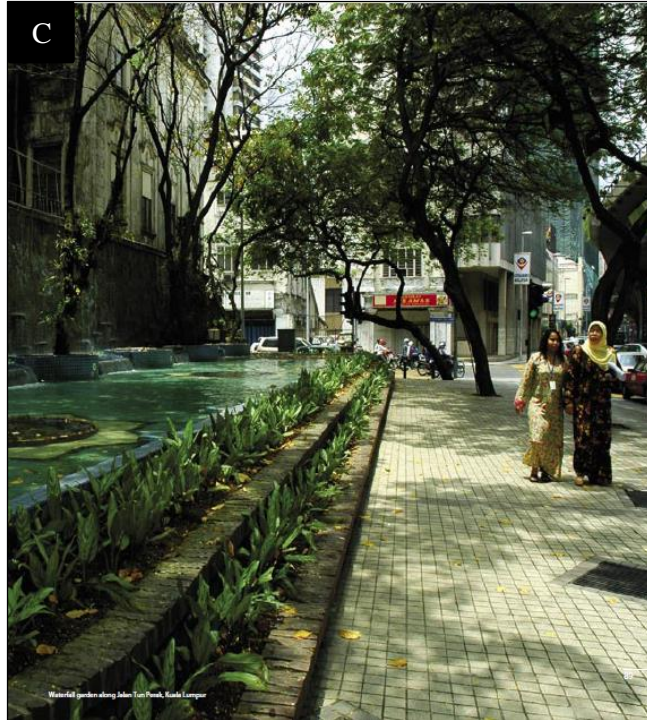
## APPENDICES



**A. The Laman Tuanku Abdul Rahman that was undergoing renovation.**



**B. The Laman Jepun that was excluded because it is located in the middle of a busy road (Jalan Sultan Ismail off Jalan Raja Chulan).**



**C. The waterfall garden along Jalan Tun Perak (online resources). Picture taken before the revitalisation.**



**D. The Laman Tun Perak after the revitalisation in 2017.**



## BIODATA OF STUDENT

I am Praveena a/p Balai Kerishnan. I was born in Kuala Lumpur on 1 September 1984. I have completed my degree in Forestry Science majoring in Nature Parks and Recreation from University Malaysia Sabah (UMS) in 2007. Currently, I am working as a Research Officer (Non-research and management scope) in Forest Research Institute Malaysia (FRIM), in Kepong, Selangor.



## LIST OF PUBLICATIONS

- Praveena, B., Sreetheran, M. & Suhardi Maulan. (2020). Factors Influencing the Usability Pattern and Constraints of Pocket Parks in Kuala Lumpur. *Urban Forestry and Urban Greening*, Volume 50, 126647 (April 2020). <https://doi.org/10.1016/j.ufug.2020.126647>.
- Praveena, B., Sreetheran, M. & Suhardi Maulan. Factors contributing to the Usage of Pocket Parks—a Review of the Evidence [First review by *Urban Forestry and Urban Greening*, April 2020].
- Praveena, B. & Sreetheran, M. (2018). Investigating the Usability Pattern of Pocket Parks in Kuala Lumpur [e-proceeding, page 1169-1179]. *IFLA World Congress 2018* held on 18-21 July 2018 at Sands Expo and Convention Centre, Marina Bay Sands, Singapore.



**UNIVERSITI PUTRA MALAYSIA**

**STATUS CONFIRMATION FOR THESIS / PROJECT REPORT AND COPYRIGHT**

**ACADEMIC SESSION :** \_\_\_\_\_

**TITLE OF THESIS / PROJECT REPORT :**

INVESTIGATING THE FUNCTIONALITY AND CONSTRAINTS OF URBAN POCKET PARKS  
IN KUALA LUMPUR, MALAYSIA

**NAME OF STUDENT :** PRAVEENA A/P BALAI KERISHNAN (GS49899)

I acknowledge that the copyright and other intellectual property in the thesis/project report belonged to Universiti Putra Malaysia and I agree to allow this thesis/project report to be placed at the library under the following terms:

1. This thesis/project report is the property of Universiti Putra Malaysia.
2. The library of Universiti Putra Malaysia has the right to make copies for educational purposes only.
3. The library of Universiti Putra Malaysia is allowed to make copies of this thesis for academic exchange.

I declare that this thesis is classified as :

\*Please tick (v )

☐

**CONFIDENTIAL**

(Contain confidential information under Official Secret Act 1972).

☐

**RESTRICTED**

(Contains restricted information as specified by the organization/institution where research was done).

☐

**OPEN ACCESS**

I agree that my thesis/project report to be published as hard copy or online open access.

This thesis is submitted for :

☐

**PATENT**

Embargo from \_\_\_\_\_ until \_\_\_\_\_  
(date) (date)

**Approved by:**

\_\_\_\_\_  
(Signature of Student)  
New IC No/ Passport No.:

Date :

\_\_\_\_\_  
(Signature of Chairman of Supervisory Committee)  
Name:

Date :

[Note : If the thesis is **CONFIDENTIAL** or **RESTRICTED**, please attach with the letter from the organization/institution with period and reasons for confidentiality or restricted. ]