UNIVERSITI PUTRA MALAYSIA

LOCAL GOVERNMENT GREEN SPACE POLICY FOR SOCIAL WELL-BEING IN SELECTED AREAS OF MALAYSIA

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FPAS 2014 24

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By

SA'ADU ABDULRAHMAN DANJAJI

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

November 2014

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DEDICATION

This thesis is dedicated to the family of Alhaji Sa'adu Muhammad Danjaji, may Allah (SWT) continue to guide and protect the family. Ameen

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Abstract thesis presented to the Senate of Universiti Putra Malaysia, in Fulfilment of the requirement for the award of the Degree of Master of Science

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By

SA'ADU ABDULRAHMAN DANJAJI

November 2014

Chair: Mariani Binti Ho Nyuk Onn@ Ariffin, PhD
Faculty: Environmental Studies

Urban green space is a network of natural and semi-natural features in a harmonious order that enhances human well-being, increases ecosystem resilience, and contributes to biodiversity conservation. The decreasing urban green spaces in our present-day cities are recognised to be a source of dissatisfaction in urban life. This negative scenario has given rise to the subsequent deterioration of urban quality of live which has impact on the overall well-being of urban population. This research did a systematic study of local government green spaces policy for social wellbeing in selected areas of Malaysia. The specific objectives of the research were to analyse planning policy related to urban green space provision in Peninsular Malaysia and to determine urban green space impacts on social well-being in Putrajaya. The research used a mixed method research approach. A qualitative document analysis of five selected planning instruments which guide physical development in Peninsular Malaysia was conducted. In examining the policy documents, several variables namely open space, natural areas, green corridors, and conservation were used. Each policy documents was scored from one to three points for each variable. In analysing the result of qualitative document analysis, systematic policy analysis was conducted following the model developed by Weiner and Vinings, which indicates the need for the rigorous implementation of urban green space policies. The study found that the provision of corridor or urban trails was given the least priority by the policies, while the protection of natural areas was accorded greater emphasis. The provision of urban green spaces and conservation of flora and fauna were given equal consideration by the policies. The policies analysed were comprehensive in covering urban green space provision in Malaysia but the present supply of urban green space was below the policy requirement of providing two hectares of urban green open space to every one thousand urban residents in Peninsular Malaysia. A questionnaire survey was also conducted in four selected green open spaces in Putrajaya. The survey results were analysed using descriptive and inferential statistical analysis. The descriptive statistics explained the socio-demographic information of respondent, while Pearson moment correlation analysis was performed to show relationship and direction of relation

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between two variables. Linear regression analysis was also conducted to determine which of the variables of urban green space (quality, quantity, and accessibility) are predictors of health promotion and satisfaction resulted from visiting urban green spaces in Putrajaya. Similarly, in predicting well-being which resulted from visiting urban green spaces, health promotion and satisfaction are used as independent variables. The results found that, visitation of urban green spaces contributed significantly to improvement of human well-being. The findings of this work indicated that, accessibility to urban green spaces had no statistical significance towards health promotion in Putrajaya. However, accessibility had a unique contribution to the satisfaction of the visitors of urban green spaces in Putrajaya, which is the most unique contributor of human well-being. The findings of the policy analysis indicated a need for the provision of more urban green open spaces in the majority of urban areas analysed in Selangor state. The study concluded that good quality, sufficient quantity, and well accessible urban green spaces should be provided to the urban population as those places could help the well-being of urban residents. In addition to overcoming lack of urban green spaces, the existing policies should promote creation of green corridors which would add to accessibility of urban green spaces and aesthetic quality of urban built environment.

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

POLISI KAWASAN HIJAU KERAJAAN TEMPATAN UNTUK KESEJAHTERAAN SOSIAL DI KAWASAN TERPILIH DI MALAYSIA

Oleh

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Kawasan hijau di bandar adalah satu rangkaian ciri semula jadi dan separa semulajadi dalam satu jaringan harmoni bagi meningkatkan kesejahteraan hidup manusia, meningkatkan daya tahan ekosistem, dan menyumbang kepada pemuliharaan biodiversiti. Kekurangan kawasan hijau di bandar pada hari ini telah menyebabkan rasa ketidakpuasan hidup di kawasan bandar. Senario negatif ini telah menimbulkan kemerosotan dalam kualiti hidup di bandar yang turut memberi kesan kepada kesejahteraan penduduk bandar. Penyelidikan ini merupakan kajian sistematik ke atas polisi kawasan hijau kerajaan tempatan untuk kesejahteraan sosial penduduk di kawasan terpilih di Malaysia. Objektif khusus kajian ini adalah untuk menganalisis polisi perancangan yang berkaitan dengan penyediaan ruang hijau di bandar di Semenanjung Malaysia dan menentukan kesan ruang hijau di bandar ke atas kesejahteraan sosial penduduk di Putrajaya. Kajian ini menggunakan pendekatan kajian kaedah campuran. Analisis dokumen kualitatif di mana lima instrumen perancangan dipilih sebagai panduan pembangunan fizikal di Semenanjung Malaysia telah dijalankan. Beberapa pembolehubah yang dikaji adalah ruang terbuka, kawasan semula jadi, koridor hijau, dan pemuliharaan telah digunakan dalam analisis dokumen polisi yang dipilih. Setiap dokumen polisi menggunakan skor satu hingga tiga bagi setiap pembolehubah. Hasil daripada analisis kualitatif dokumen ini, satu analisis polisi secara sistematik telah dijalankan berpandukan model yang dibangunkan oleh Weiner dan Vinings, yang menunjukkan keperluan pelaksanaan polisi ruang hijau di bandar. Kajian mendapati bahawa polisi yang dipilih kurang memberi keutamaan untuk kawasan laluan koridor atau bandar manakala perlindungan kawasan alam semula jadi diberi penekanan yang lebih dalam polisi. Penyediaan kawasan hijau di bandar dan pemuliharaan flora dan fauna diberi pertimbangan yang sama rata dalam semua polisi. Walau bagaimanapun, analisis polisi adalah komprehensif meliputi peruntukan dalam ruang hijau di bandar di Malaysia; mengikut keperluan semasa, dua hektar ruang hijau terbuka di bandar perlu disediakan untuk setiap satu ribu penduduk bandar di Semenanjung Malaysia. Satu kaji soal selidik juga telah dijalankan di empat kawasan lapang hijau terpilih di Putrajaya.

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Kaji selidik menggunakan analisis statistik deskriptif dan inferensi. Statistik deskriptif menjelaskan maklumat sosio-demografi responden, manakala analisis korelasi Pearson menunjukkan hubungan antara dua pembolehubah. Analisis regresi linear juga telah dijalankan untuk menentukan sifat-sifat ruang bandar hijau (kualiti, kuantiti, dan akses) berkaitan dengan promosi kesihatan dan kepuasan hasil daripada melawat kawasan hijau di Putrajaya. Selain itu, kajian juga menentukan sama ada kesejahteraan hidup disebabkan oleh kesan daripada melawat kawasan hijau di bandar, di mana promosi kesihatan dan kepuasan digunakan sebagai pembolehubah bebas. Hasil kajian mendapati, lawatan kawasan hijau di bandar menyumbang kepada peningkatan kesejahteraan manusia. Hasil kajian ini juga menunjukkan bahawa, akses kepada kawasan hijau di bandar secara statistic menunjukkan tidak signifikan terhadap promosi kesihatan di Putrajaya. Walau bagaimanapun, akses mempunyai hubungan untuk memuaskan hati pengunjung yang mengunjungi kawasan hijau di Putrajaya, yang merupakan penyumbang yang paling unik untuk kesejahteraan manusia. Hasil analisis polisi menunjukkan keperluan penyediaan kawasan lapang hijau di kebanyakan kawasan bandar yang dikaji. Kajian merumuskan bahawa kualiti yang baik, kuantiti yang mencukupi, dan ruang hijau di bandar yang boleh diakses perlu disediakan untuk penduduk bandar sebagai tempat-tempat yang dapat membantu kesejahteraan penduduk bandar. Selain mengatasi kekurangan kawasan hijau di bandar, polisi yang sedia ada harus mewujudkan koridor hijau yang akan menambah kepada akses kepada kawasan hijau di bandar dan pembinaan kualiti estetik persekitaran bandar.

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In the name of Allah, the most gracious, the most merciful; I commence by praising Allah (S.W.T), and sending blessing and salutation upon master of peace Muhammad Ibn Abdallah. May Allah's peace and blessing be upon him, his noble household, and his guided righteous companions; may Allah (S.W.T) continue to blessed them, and may Allah bless all those who struggle and strive to preserve the Islamic religion, and all to those who convey it in such a way that today it has come to us, and may Allah bless us all Ameen.

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I certify that a Thesis Examination Committee has met on 4 November 2014 to conduct the final examination of Sa'adu Abdulrahman Danjaji on his thesis entitled "Local Government Green Space Policy for Social Well-Being in Selected Areas of Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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LIST OF ABBREVIATIONS

DV	Dependent Variable
e^0	Random error
FDTCP	Federal Department of Town and Country Planning
GI	Green Infrastructure
H_o	Null Hypothesis
IV	Independent Variable
JBPD	Jabatan Perancangan Bandar dan Desa
Km	Kilometre
KLIA	Kuala Lumpur International Airport
LGA	Local Government Act
MSC	Multi-Media Super Corridor
m^2	Square Metre
MB	Majlis Bandaraya
MD	Majlis Daerah
MP	Majlis Perbandaran
n	Number of Respondents
NGO	Non-Governmental Organization
NPP 2	National Physical Plan 2
NNPC	National Physical Plan Commission
NUP	National Urbanization Policy
PhD	Doctor of Philosophy
PM	Post Meridian (Afternoon)
PMR	Penilaian Menengah Rendah
RM	Malaysian Ringgit
SPM	Sijil Pelajaran Malaysia (O' Level)
STPM	Sijil Tinggi Persekolahan Malaysia (A' Level)
SPSS	Statistical Package for Social Scientist
SD	Standard Deviation
£	Starling Pound

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Green Infrastructure (GI) is a network of natural and semi-natural features in a harmonious order that enhances human well-being, increases ecosystem resilience, and contributes to biodiversity conservation (Naumann et al., 2011). GI assists in creating an aesthetically pleasing, functionally efficient built environment, and promotes social cohesion in neighbourhoods by bringing the community together and establishing a sense of identity. It creates communities which have a high sense of inclusiveness, thereby eliminating disparity amongst the populace.

GI advocates sustainable living by harmonising and integrating grey infrastructure; the recognition of the contribution of GI by many countries, especially the EU and the USA, promotes the incorporation of GI in their developmental policy. Malaysia also recognises the huge contribution of GI in achieving sustainable urban development with limited financial resources, which is further strengthened by its desire to attain developed nation status by the year 2020.

Malaysia is rich with biodiversity and has tourist attraction sites which are strongly attached to nature. Some of the species in Malaysia are endemic, with some on the brick of extinction. Therefore, incorporating GI policy in the country's developmental policy would ensure success in the conservation of natural resources. To this end, this study seeks to review the effectiveness of Malaysian policies on GI and the measures put in place towards implementing those policies. The study seeks to determine benefit attached to green open space visitation in some selected areas in Putrajaya, characteristics of green open spaces were employed in determining the effectiveness in supply of urban green open spaces. Incorporation of public opinion in local plan design ensures acceptance and efficient maintenance by the local community.

1.2 Problem Statement

Urban planning is a strategy of promoting health status of urban residents which could be traced back to post-war period (1850-1900). American and European cities were experiencing rapid industrialization that was characterized as antecedents of pathogenic urban degradation (Corburn, 2007). This results to overcrowding which increases pollution and contagious diseases. Urban renewal was advocated in cleansing the decayed cities, through creation of urban park that is recognized as panacea to provides the cities with breathing spaces (Corburn, 2007).

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However, the 21st century diseases were highly related with the way our present cities are developed. The cities were argued to promote sedentary living resulting from lack of adequate urban green spaces and sprawling system of development that consumed urban land unsustainably which also reduces the amount of urban green spaces in our urban areas; thus, affects the urban quality of live (Ewing et al., 2014). Nevertheless urban green spaces are resources for promotion of recreational service which encourage active living (Jim & Chen, 2006). Hence, systematic provision of urban green spaces would have positive influence on the health status of urban residence.

Moreover, urban residents worldwide express desire for contact with nature and with each other (Matsuoka & Kaplan, 2008). Although an attractive environment was found to offers an opportunity to its residents to engage in recreational activities (Qiu et al., 2013). However, conversion of urban green spaces to other uses has distanced urban communities from nature, and created barriers to social inclusiveness (Zhao et al., 2013). The decreasing urban green spaces in our present-day cities are recognised to be a source of dissatisfaction in urban life.

This argument was buttressed by the rapid growth of Shah Alam city in Malaysia, which witnessed significant change in land use and land cover patterns, resulting in an increase of urban heat island and thermal radiant of built-up areas which significantly increased the radiant temperature (Buyadi et al., 2013). Urban heat stress is more prevalent in heavily populated residential areas with limited supply of urban green spaces, causing urban residents to recognise the importance of green open spaces within their built environment. The urbanisation trend and its glaring negative impact on the availability and quality of urban green spaces persuades many countries to design efficient policies to provide new urban green spaces in areas which lack them (Lawrence et al., 2013). And to improve the quality of the available urban green space that enhance social well-being of urban residents.

Research Questions

1. To what extent have Malaysian planning policies provided for the provision of GI facilities?
2. Is there any gap between GI policy provision and the present GI supply in Selangor state, Kuala Lumpur, and Putrajaya?
3. Does visitation to urban green spaces enhance human well-being?

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1.2 General Objective

The main objective of this study is to examine local government green spaces policies for social well-being in selected areas of Malaysia. The study would also determine benefits attached to visitation of urban green spaces in Putrajaya, Malaysia.

1.4 Specific Objectives

- To analyse planning policy related to urban green space provision in Selangor state.
- To determine urban green space visitation and its impacts on social well-being in Putrajaya.

The research hypotheses below are used to answer research question three, using objective two of the study.

1.5 Research Hypothesis

$H_0$1: There is significant relationship between the promotion of health and satisfaction of urban green spaces.

$H_0$2: There is a significant relationship between urban green spaces and the promotion of visitors' well-being.

$H_0$3: All the independent variables are significant when regressed against health promotion.

$H_0$4: All the independent variables are significant when regressed against satisfaction.

$H_0$5: The green open spaces are significant when regressed against satisfaction and health promotion.

1.6 Significance of the Study

The research aims to assist policymakers in understanding the types and characteristics of urban green open spaces which ought to be provided in Malaysian urban areas. Potentially, this would assist policymakers in formulating sound policies that would guide the provision of GI, so that while developing local planning policy the aspirations of local communities are represented in the plan. The findings could help in diversifying other categories of GI attributes, as was concluded from the findings that creation of green corridors would assist tremendously in filling the deficit of GI provision in Malaysia. The findings add to the existing literature as a unique approach was taken in the study.

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1.7 Scope of the Study

The study covered Selangor state and its local authorities in understanding the present supply of green open spaces in the entire state and a prediction was made to ascertain the policy requirements for the supply of green open spaces in the state. Kuala Lumpur and Putrajaya green open space data were also collected and compared. Putrajaya was further used as a survey area and green open space attributes were used (what are the quality of the open spaces, their quantity, and their accessibility). The study used 371 questionnaire responses from the four green open spaces selected in Putrajaya, and 40 respondents were used for a pilot survey in one of the green open spaces selected in determining the validity of the survey instrument.

1.8 Limitation of the Study

The samples of the population were drawn from four of the green open spaces located in Putrajaya. The green open spaces selected were Taman Putra Perdana, Taman Botani, Taman Saujana Hijau, and Putrajaya Lake. There are various limitations due largely to time and resources; the study was limited to Selangor, which is the most populous state in Malaysia. Therefore, all assumptions are based on urbanised settlements because they are recognised as areas in need of GI. The study was also limited to data extracted from four planning policy documents which are the Federal Department of Town and Country Planning Act (Act 172), the National Physical Plan 2 (NPP2), the National Urbanisation Policy (NUP), Local Government Act (Act 171), and the National Landscape Policy (NLP).

1.9 Thesis Organization

The present study uses tradition method of thesis organization which consists of five chapters. Chapters two of this research consist of literature review definition of GI; evolution of GI; GI and sustainable development; GI and social well-being; GI planning concept; national policy on the environment, Malaysia; tenth Malaysian plan; and policy analysis model.

Chapter three of the study demonstrated how the study was conducted. The method used in the study which mixed method started with the explanation on mixed method strategy as a way of conducting research, which consist both qualitative and quantitative research design.

Chapter four of the study is organised in three stages. The first part demonstrated the results of qualitative content analysis conducted on five policy documents. The second stages provide results for policy analysis conducted in the study following the model of Weiner and Vining. The third which is the last section of the chapter show results of Pearson moment correlation analysis conducted in the study which was followed by multiple linear regression analysis conducted in the study.

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Chapter five consist of conclusion and recommendation; policy implication of the study; and recommendations from the study.

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