ANALYSIS OF MULTI-STAKEHOLDER INVOLVEMENT AND URBAN GREEN SPACE PERFORMANCE

THESIS

A thesis submitted in partial fulfillment of the requirements for
the Master Degree from University of Groningen and
the Master Degree from Institut Teknologi Bandung

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DOUBLE MASTER DEGREE PROGRAMME
ENVIRONMENTAL AND INFRASTRUCTURE PLANNING
FACULTY OF SPATIAL SCIENCE
UNIVERSITY OF GRONINGEN
AND
DEVELOPMENT PLANNING AND INFRASTRUCTURE MANAGEMENT
SCHOOL OF ARCHITECTURE, PLANNING AND POLICY DEVELOPMENT
INSTITUT TEKNOLOGI BANDUNG

2009

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Abstract

This study is unique in a sense, as it's among few attempts that a mixed method of quantitative and qualitative analysis is run to determine the factors that influence Urban Green Space Performance (UGSP). This study is also different from previous studies in its conceptual framework and indicators to analyze the relationship of Multi Stakeholder Involvement (MSI) and UGSP.

Urban green space projects all over the world published in international journals constitute as population in this study and the unit of analysis is limited to urban green space projects dealing with MSI in their development and management. The data was searched from three comprehensive database: ISI Web of Knowledge, Scopus and Picarta by using the combination of keywords resulted in 29 relevant journal articles consisting of 42 urban green space projects as the case study.

Via quantitative content analysis, this study tries to analyze whether MSI always contribute to the better performance of urban green space. Furthermore, this study tries to find which internal and external factors of MSI significantly influence UGSP and explains why and how such factors give significant influence. The internal factors consist of structure (state, private, society) and roles (planning/design, implementation, maintenance, input for management and financial support) of stakeholder while external factors consist of regulation, good leadership and good financial support.

This study found that MSIs do not always contribute to a better UGSP. Based on scoring and ranking, only one cases (2.38%) constituting as excellent project (Brownfield development in Toronto). 26.19% other cases are ranked as good project, 33.33% are ranked as fair project while another 38.10% cases are ranked as poor. Some factors of MSI which significantly influence urban green space performance are state, society, implementation and regulation about green space. However, due to context-dependent nature of planning including urban green space development and management, this lesson cannot be implemented without caution.

Keywords: urban green space, Multi Stakeholder Involvement, performance

PREFACE AND ACKNOWLEDGEMENT

Nowadays people start to pay more attention to their quality of life and sustainable development. Like the environmentalists point of view, human is a part of nature and should live in harmony with that. In accordance with the development of build-up area, people also try to develop more green open space particularly in urban area such as parks, green belts, urban forests etc to make our life in harmony with nature.

In these last decades there was also an increase awareness that government no longer become the single actor in development including in urban green spaces development and management. The Book " The Death and Life of Great American Cities by Jane Jacobs about the important and strength of urban community's roles in preserving their environment by tending to minimize government's intervention is inspired me to think more about the role of government and multi stakeholder involvement in urban green space development and management. As a government employee working daily at garden division, I'm interested to know: Is the role of government no longer important? Will multi actors always contribute to a better performance of urban green space?

Inspired by the research of Floress et al. in 2009 about assessing the quality of some greenways plans in North Indiana, I try to analyze the relationship of urban green space performance and multi stakeholder involvement in urban green space development and management and find what factors of the multi stakeholder involvement actually have significant influence on urban green space performance.

This master thesis is a final part of my study in Double Master Degree Programme of Environmental and Infrastructure Planning (Faculty of Spatial Science, RuG, the Netherlands) and Development Planning and Infrastructure Management (School of Architecture, Planning and Policy Development, ITB, Indonesia). My utmost gratitude is to Allah s.w.t for blessing me in finishing my study and this master thesis in Netherlands. I would like to give my great respect and thanks to my supervisors, Prof. Dr. Peter Ho, Dr. Hossein Azadi, Ir. Roos Akbar, M.Sc. Ph.D for guiding me a lot in finishing this master thesis.

Many thanks are dedicated to all of my lecturers in UPT Bahasa ITB, ITB and RUG for sharing their invaluable knowledge and experiences. Thanks to Indonesian Development Board (Bappenas) and Netherlands Education Support Office (NESO) through StuNed program for giving me financial support and to Padang Panjang Local Government for allowing me to go back to school. I also thanks to all DD ITB-RuG 2008 students for being my family and giving different

colours in my days for the last two years. To my *sensei*, Widyo Pura Buana, thanks for supporting and teaching me a lot. I was blind to statistical analysis.

My great grateful to my family in Indonesia, to *Ibu* Hanifah Arifin, *Bapak* Baharuddin, *Ibuk* Ummiati Syarif, my young sister Erma Helfita and my young brother Iman Satria, your loves and supports mean so much for me to fight.

Groningen,
August 2009

GUIDELINE FOR USING THESIS

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ABBREVIATIONS

Anova : Analysis of Variance
CBO : Community Based Organization
DW : Durbin Watson
LSD : Least Significant Difference
MLR : Multiple Linear Regression
MSI : Multi-stakeholder Involvement
MSP : Multi-stakeholder Process
NGO : Non-Government Organization
FBO : Faith Based Organization
OALD : Oxford Advanced Learner Dictionary
OECD : Organization for Economic Co-operation and Development
SPSS : Statistical Package for the Social Sciences
UGSP : Urban Green Space Performance
UK : United Kingdom
VIF : Variance Inflation Factor
UNDP : United Nation Development Progamme
USA : United Stated of America

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CHAPTER I
INTRODUCTION

1.1. Background

The development and management of green spaces in urban area is mostly the responsibility of the government. On the current issue of green space development and management, there is a tendency that the government is no longer the single agent. "The state is a big force for development - but it is not the only one" (UNDP, 2004). Erickson (2006) in Smith (2007) argued that *"rarely, if ever, the initiator of open space project is its sole implementer"* (p.4). A comparative study about development and management of green spaces in 26 European cities by Baycant et al., (2002) suggest that *"a collaborative and enable partnership among local authorities, local business and voluntary groups should be formed"* (p.10) to improve the quality of urban green spaces. This kind of collaboration can be regarded as Multi-stakeholder Involvement (MSI) in urban green space development and management. Furthermore, (Smith, 2007) argued that in other policy areas (instead of open spaces), increased collaboration and networking will give a positive effect on performance and according to Smith it will also be relevant that increased collaboration will also lead to a better Urban Green Space Performance (UGSP).

Urban Green Space Performance (UGSP) can be defined as the out put of green space development and management process which can be measured by quantitative indicator such as total area/person or qualitative indicator such as its environmental, social and economic benefits. The term MSI can be defined as a harmonious collaboration of actors in green space development and management which will influence, can influence, or will be influenced by such an urban green space development to pursue perceived goals. This kind of collaboration can be implemented in all steps of urban green space development and management, from planning and designing up to input for management and financial support. Another term for MSI is Multi-stakeholder Process (MSP) which was used by

Hemmati (2002; p.2). Hemmati defined the term MSP as *processes which aim to bring together all major stakeholders* in a new form of communication, decision-finding (and possibly decision-making).

Via quantitative content analysis, this study tries to collect and analyze some urban green space development and management projects from previous scientific researches all over the world having experience with MSI. The population of this study is urban green space institution all over the world. The element of this study is "the studies about MSI in urban green space development and management" themselves while unit of analysis is urban green space institution elaborated in previous studies. The data was searched from three comprehensive databases: ISI Web of Knowledge, Scopus and Picarta by using the combination of keywords related to urban green space development and management and MSI's aspects. 20.522 journal articles were found based on the combination of urban green space keywords. These journal articles are selected based on their relevant tittles and abstracts and the availability of urban green space performance and MSI indicator that they have in their contents resulting at 29 journal articles with 42 urban green space cases. All of cases in this study are public urban green space projects, meaning that urban green space accessible for public because according to Rodenburg, et al., (2002) p. 3, "*the important of urban green lies in public access*".

This study was conducted based on mixed methodology by transforming qualitative data into quantitative measure. Qualitative data such as the indicators of urban green space performance and MSIs indicators found in journal articles are transformed into quantitative measure by giving some numerical codes. This numerical data were further analyzed using quantitative methods to assess whether MSI will lead to a better UGSP and to find some aspects of MSI which influence urban green space performance.

1.2. Problem Statement

Several studies found that involving multi-stakeholders is proved to be important in successful green space (Denters & Klok, 2006; Leach, 2002; Baud & Danalakshmi, 2007; Budianto, 2007; Iskandarsyah, 2006; Amelia, 2007). In the other hand, other study also found that involving many actors will sometimes need more cost and time and threaten green space existence. Delfin & Tang, (2006) found that privatization of urban green space leads to an exessive development rather than protection.

The success and fail stories of urban green space development and management applying MSI will be influenced by some factors of MSI itself. The previous studies found that the availability of legal basis, good leadership, financial basis, who involved and what the actors do will influence the relationship of MSI and green space performance. Different countries might experience different types and problems of MSI. Therefore, it is important to understand what factors of MSI significantly influencing green space performance in general. Since there is no systematic overview of such factors (they were explained in separated studies), the problem of identifying factors significantly influencing urban green space performance seems to be ill-defined. Identifying such factors, this study tries to fill this gap.

1.3. Objective and Significance

This research aims to collect previous studies about green space development and management having experienced with MSI. Furthermore this study is intended to see whether MSI will lead to a better UGSP and to find what aspect of MSI contributed to this performance.

This study is unique in a sense, as it is among few attempts that a mixed method of quantitative and qualitative analysis is run to determine the factors that influence UGSP**.** Floress (2009) has also used mixed method to analyze some factors which influence UGSP but she used different technique and focus. Floress

analyzed some factors influencing UGSP focused on socio-economic aspects of urban green space such as population density, wealth and education while this study will focus on MSI's aspects which influence UGSP.

This study is also different from previous studies in its conceptual framework and indicators to analyze the relationship of MSI and UGSP. Some previous studies which also inspired this study have already developed conceptual framework to assess green space performance. Berkey & Conroy (2000), Lindsey (2003), Floress (2009) assessed greenway plans using general principles of sustainable development such as harmony with nature, livable built environments, place-based economy, equity, polluters pay, responsible regionalism and tourism. Baycan-Levent, et al., (2004) developed a conceptual framework to assess urban green space performance based on the value of green space in urban area such as ecological, economic, social and multi dimensional values. This study combines all of those principles based on characteristics which are mostly elaborated in urban green space development and management studies.

This study has also a policy relevant. Because of the ill-defined nature of MSI, policy makers have difficulties in framing and implementing an effective policy about green space development and management. Conceptual framework to assess green space performance and identifying significant factors of MSI which influence this performance will help policy makers to make a priority in urban green space decision.

1.4. Research Question

Main questions of this research are

a) Does MSI lead to a better performance of urban green space development and management?
b) What factors of multi-stakeholder involvement significantly influence green space performance?

   This question can be elaborated into the following sub-questions:

- Do internal factors of MSI such as structure and roles of stakeholders influence urban green space performance?
- Do external factors of MSI such as regulation, good leadership and good financial basis also influence urban green space performance?

c) Why do these factors can influence urban green space performance?

d) How do these factors influence urban green space performance?

The main hypothesis of this study is considered as "MSI will lead to a better UGSP". Furthermore, both internal and external factors of MSI will significantly contribute to this better performance. Internal factors in this study means factors embedded to the actors (actor-centered) consisting of who involved (structure of stakeholders) and what they do (roles of stakeholders) while external factors means other factors outside these actor. Further explanation about these factors will be elaborated in Chapter 2

1.5. Thesis Structure

This study consists of five chapters. The content of each chapter can be defined as follow:

Chapter 1 : Introduction

This Chapter consists of study background, problem statement, research questions and research structure.

Chaper 2 : Theoretical Framework

This Chapter provides theoretical framework explaining General perspective of urban green space, urban green space performance, and some factors influencing green space performance, Multi-stakeholder Involvement and urban green space performance

Chapter 3 : Methodology

This Chapter explains sampling method, method of scoring, descriptive statistic, compare mean, correlation and regression analysis.

Chapter 4 : Data and Analysis

This Chapter describes the characteristic of data, the result of scoring, descriptive statistics, compare mean, correlation and regression analysis, interpretation and discussion about why and how such variables significantly influence green space performance.

Chapter 5 : Conclusion and Recommendation

This Chapter concludes research finding and recommend what should be consider before deciding MSI in green space development and management and recommendation for further researches.

CHAPTER II
LITERATURE REVIEW

2.1. General Perspective of Urban Green Spaces

Environmental problems, including green spaces, whether related to its quality and quantity were much found in urban area because of its rapid development. Throughout the world, the size of urban area has increased during these recent decades. About 50% of world's population and approximately 76% of those in more developed countries are urban dwellers (Sandstrom, 2002). Altherr, et al., (2007) argue that the nearer public open spaces location to the city centre, the higher the pressure on them.

Because of this background, people start to realize that green space is an important aspect of urban area. *Green spaces is public and private open spaces in urban areas, primarily covered by vegetation, which are directly (e.g. active or passive recreation) or indirectly (e.g. positive influence on the urban environment) available for users* (URGE, 2001 in Rodenburg, et al., (2002)p. 3).

Nowadays people try to develop more green open space such as parks, green belts, urban forests etc to make the life in harmony with nature. Green spaces are nice examples of positive environmental externalities and play a key role in improving the liveability of our towns and cities (Baycan & Nijcamp, 2004). This key role can be elaborated into several criteria. Baycan & Nijcamp classify those criteria into some perspective as follow:

a) From social perspective

Urban green space can function as a place to do social activities such as gathering, festival, civic celebration, art performance. Urban green space can also provide a playing ground for children and contribute to provide a knowledge and skill, particularly knowledge about environment and nature (Taylor et al., 1995). Furthermore, the collaboration of multi-stakeholder in urban green spaces can build social capital (Teal et al., 1998, Cheng et al., 2006). Urban green space can also support cultural, historical heritage

preservation for instance preserving royal heritage in the park (Barthel, 2005) and preserving prairie style design of a place as its cultural image (Gobster, 1997). In addition, urban green space will also provide an aesthetic experience which indirectly will contribute to human health.

b) From planning perspective

Urban green space can function as a connector or barrier among different land use allocations in urban area. As the connector, green space can provide a network to link residential with business and other area which can improve accessibility and attractiveness of certain place (Tan, 2006). Well-design network will encourage people to travel by foot or by bicycle so that it can support the idea of smart growth (Scottish Executive, 2001). As barrier, urban green space can function for instance as noise barrier and provide a visual screen to minimize "a bad view" landscape in urban environment. In addition, urban green space can hinder excessive development of urban area (Hollis, 2002)

c) From economic perspective

Urban green space can be planted as edible landscape (Stocker & Barnett, 1998; Burley, 1995), provide fruits or woods and other urban green production. In addition, the implementation of green space project can provide a job opportunity for local people.

d) From ecological perspective

Urban green space can provide an ecological network as habitat preservation (Sausa, 2002; Erickson, 2004; Ernston et al., 2008). Urban green space can also contribute to microclimatic amelioration by providing a fresh air (Jim, 2000) and water conservation (Stocker & Barnett, 1998). In addition, urban green space offers some environmental services such as protecting drinking water resource and reducing atmospheric pollution (Nilsson et al., 2007)

Many types of urban green space can be classified into some categories. The classification can be based on land use zone, function, people's need or proximity of service area. In this study, urban green space projects are classified into several

categories based on their common characteristics. In general, urban green space projects can be classified into:

- Greenways

  Greenways are linear open spaces located along natural or man made landscape elements such as rivers, roads, railways and canals (Erickson, 2004). Furthermore Erickson explains that greenways are planned, designed and managed to protect and connect ecological, scenic, cultural and recreational areas. A greenway can exist as trail, corridor, recreational area or linear area of conservation without recreational functions.

- Greenbelt

  Greenbelts are broad strip areas consisting of natural or open land surrounding cities or towns areas (Erickson, 2004). According to Erickson (2004), the idea of greenbelt originated from Garden City Movement on early 20^{th} century in Great Britain meant to control urban growth through development restriction in this area. Furthermore, Erickson elaborates that greenbelts are different from greenways in their original pattern. Greenway patterns follow the linear pattern of landscape feature while greenbelt patterns are influenced by towns or cities boundaries.

- Brownfield Redevelopment

  Brownfield redevelopment can be defined as the expansion or reuse of abundant or disused industrial or commercial facilities such as railway, ex-industrial sites, etc (Sausa, 2002; Alther et al., 2007). Brownfield areas are often related to contaminated sites whether it is *known* or *suspected* due to their previous land use functions. The brownfield redevelopment was initially intended to commercial or residential uses that provide some economic benefits. But know there is a growing awareness that brownfield is potential for urban greening project as well (Sausa, 2002).

- Neighborhood/community garden

  Neigborhood/community garden is garden located closed to residential area and managed by community members. Types of neighborhood/community gardens range from community's individual plots to communal green space projects which seek to involve community in their development process (Stocker & Barnett, 1998).

- City Park

  City park is a kind of urban green space usually located closed to city center. City park provides various function ranging from ecological, economical and social function serving wider area than neighborhood park (Departement of Planning and Zoning, 2000).

- National Park

  National park is a pacel of land declared by the national government as public proverty intended to preserve natural or cultural assest (Department of Agriculture, Fisheries and Foresty of Australian Government, 2009).

- Urban Forest

  Urban forest can be defined as trees and forest in and around urban community for the physiological, sociological, economic, and aesthetic benefits trees provide society (Konijnendijka, et al., 2006). Konijnendijka argued that definitions of urban forestry and urban can be different in different countries and now this definition become more comprehensive, including all tree stands and individual trees in and around urban areas.

2.2. Urban Green Space Performance

Urban green space performance can be defined as the out-put of urban green space development and management process. Performance can be measured using two main criteria; quantity and quality of green space. Quantity of green space is usually constituted as the proportion of green space to total urban areas or the availability of green space per person. For example 8% of Gleisdreieck park in

Germany was allocated as conservation area (Alther, 2007) or the city of Puerto Alegro has 14 square meters green space per person (Menegat, 2002). Furthermore, the quality of urban green spaces can be measured from several indicators which will be elaborated in the next section.

2.2.1. Some Indicators to Assess Urban Green Spaces Performance (UGSP)

In 2004, Baycan-Levent and Nijkamp conceptualized a taxonomy of value for urban green spaces which later used by some researchers to assess green spaces performance. This taxonomy was constructed based on the contribution (roles) of urban green spaces from social, planning, economic and ecological perspectives (which was elaborated in 2.1). Later, Baycan-Levent, et al., (2004) developed an operational taxonomy for evaluation of urban green space performance using the four previous perspectives and added another item, multi dimensional values. This multi dimensional value of urban green space consists of scientific value (education function) and policy value (financial and public function).

UGSP, can also be assessed from its responsiveness to actual issue or the ability to solve the background problem. In 2006, Denters & Klok used "responsiveness" as one of indicators to assess institutional performance of urban sustainability. They elaborated that responsiveness is related to goal achievement while sustainability is related to its contribution to economic prosperity, ecology, social cohesion, integration and coordination.

This study combines and adapts some criteria from previous studies to assess UGSP mostly focused on quality and sustainability of green space. Quality of green spaces is related to their contribution (roles) to environmental, economic and social aspects of life (contribution to sustainable development) which refers to Baycan-Levent & Nijkamp (2004) and their responsiveness to actual issues (Denter & Klok, 2006). Furthermore, the term sustainability is interpreted as the possibility of these performances to exist in the future through natural environment, economic and socio-political support.

Combining and adopting those criteria, this study uses five criteria to UGSP as follow:

a) Responsiveness to actual issues

Responsiveness to actual issues indicates the relationship of the project with existing problems/issues: a better project is project which meets its original goal or ability to solve its original problems

b) Sustainability

Sustainability in this context means the possibility of urban green space project to exist in the future due to the three bottoms up support as:

- Natural environmental support: the project will sustain when there is a natural environmental support such as land slope, soil condition, water condition, etc.
- Socio-political support: the project will more sustain when it has socio-political support such as public acceptance and good leadership.
- Financial support: the project will more sustain when it has a good financial basis.

c) Natural environmental benefit

Natural environmental benefits can be classified into:

- Conservation of land, biodiversity, natural habitat: green space project contributes to the provision and protection of natural habitat, for instance the establishment of green network, place for birds to nest etc.
- Improving air quality: green space project can provide a better air quality particularly from plants used in the project
- Improving water quality/minimizing water-related problems: green space project can improve water quality through the ability of plants to absorb water and filter the pollutants. Green space project such as riparian or green space in sloped area can minimize water related problems.

d) Economic benefit

Economic benefits of urban green space development and management can be classified into:

- Increasing property values: the value of property closed to green space location is usually higher than other areas. Brown & Pollakowski (1977) in Rouwendal (2008) found that the greater the open space around community housing, the higher the house price will be. When people realize that the availability of open space closed to their property as important and will contribute to amenity, they will also give more value to the property (Rouwendal et al., 2008).
- Increasing tax base: the establishment of green space particularly recreational green space, housing estate, etc will increase tax base revenue due to the increase of property and land value in that area.
- Increasing tourism revenue: the establishment of green space particularly recreational green space will increase tourism revenue, not only from tax

e) Socio-cultural benefit

Socio-cultural benefits of urban green space development and management can be classified into:

- Equity: the placement of open space to create more equitable environment.
- Giving knowledge/skill: green space project can provide a valuable knowledge particularly related to basis natural environmental knowledge.
- Accessibility: the establishment of green space project should provide a better access for people.
- Cultural/heritage preservation: green space project can also function as cultural heritage preservation particularly located in heritage site
- Aesthetic value: instead of functional, green space project should also be aesthetics.

2.3. Multi-stakeholder Involvement (MSI)

Many issues today cannot be addressed or resolved by a single set of governmental or other decision-makers but require cooperation between many different actors (Hemmati, 2002; pp 6-7*).* Those actors, ones who have an interest in a particular decision, either individual or groups can be regarded as stakeholder. Stakeholder includes people whose personal or professional welfare depends on the outcome of collaboration (Leach, 2002), people who influence a decision, those who potentially influence it or those who will get the effects of such decisions (Hemmati, 2002).

In general, the term multi-stakeholder involvement (MSI) in green space development and management is a process of collaboration, in which two or more actors work together to pursue a common goal. According to Smith (2007), collaboration can be either formal (mandated by the state) or informal, involve many organizations or few, can be vertical or horizontal, and can be intra and inter-organizational. This definition is similar to the term Multi-stakeholder Process used by Hemmati (2002).

Hemmati (2002) p. 19, uses the term multi-stakeholder processes to describe processes which:

a) aim to bring together all major stakeholders in a new form of communication, decision-finding (and possibly decision-making) structure on a particular issue;
b) are based on recognition of the importance of achieving equity and accountability in communication between stakeholders;
c) involve equitable representation of three or more stakeholder groups and their views;
d) are based on democratic principles of transparency and participation; and
e) aim to develop partnerships and strengthened networks between two stakeholders and among various stakeholders.

Referring to the definition of collaboration by Smith (2007) and MSP by Hemmati (2002), the term MSI in this study is defined as a harmonic collaboration of actors which will influence, can influence or will be influenced by such an urban green space development to pursue a perceived goals. This kind of collaboration can be implemented in all steps of urban green space development and management, from planning and design up to management process.

According to Hemmati (2002), this kind of collaboration emerged in sustainable development's domain because there is a need for a more inclusive and effective method for addressing sustainability issue. Furthermore, Hemmati argues that Agenda 21[1] is the first United Nation document which described stakeholder involvement as absolutely crutial for sustainable development. While according to Baycan-Levent, et.a.l, (2002), the provision, design, management and protection of urban green spaces are the priority agenda of sustainability and liveability of human settlement to improve the quality of life. Thus, the emergence of MSI in green space development and management was in line with the popularity of sustainable development.

It is hypothesized that MSI will give some benefits to urban green space performance and all actors. Häring et al., (2009) classify the benefits of multi-stakeholder processes into:

a) Quality

   MSI will improve the quality of urban green space because through collaboration different actors can share different knowledge and experiences. MSI will add specific experiences and knowledge of issues that are not easily accessible to others. *By involving wide range of concerned stakeholders such as government agencies, non profit groups, planners can develop innovative strategies for protecting land* (Ryan and Walker, 2004 in Ryan, et al., 2006; p.174).

[1] Agenda 21 is the Rio Declaration on Environment and Development, and the Statement of principles for the Sustainable Development (http://www.un.org/esa/dsd/agenda21/)

b) Credibility

Bringing together groups that do not represent the same interests will increase the transparency and credibility of urban green space projects.

c) Likelihood of impact and implementation

Including multi-stakeholder in urban green space development and management will increase their commitment to green space project due to the feeling of inclusiveness.

d) Societal gains

MSI will provide social capital such as democratic participation, equitable involvement, transparent mechanisms and successful communication among different interest groups. Häring et al., (2009) emphasize that consensus building and joint decision-making can increase mutual respect and tolerance and lead societies out of deadlock and conflict on contentious issues.

Although it has many advantages, it is not argued here that MSI is completely uncontested concept. In fact, in its implementation, several problems have been identified in literature, i.e.:

a) Conflicting of interests

Different actors in urban green space development will also have different interests. Community are usually concerned with a better environmental quality and management while private sectors are mostly concerned with economic benefit (Murdock et al., 2005; Campbell, 2002). A good coordination is very important to manage such different interests.

b) Inappropriate implementation

MSI is sometimes critized as being "*talk-shop*" or missused as being only as an effort to get legitimation from various actors, lack of gender equality and lack of regional equality (Hemmati, 2002). That's why, Hemmati explains further that monitoring and follow up of MSI process is important to improve such inappropriate implementation in the future.

c) Trust/transparency

Lack of transparency can lead to the problem of trust in MSI. For instance, in the case of land aquicition for green space in San Francisco Bay, the district was again criticized for expending funds away from the city and purchasing ranch which is not accessible for the public (Hollis & Fulton, 2002).

d) Timeline

Mediating plural interests in MSI often takes more time than involving single actors. However, Hemmati (2002) argues that people also assert to work within the timeline to keep the MSI process focused.

e) Funding

Incorporating different actors with different interest will also need more fund in its implementation. Hemmati (2002) emphasizes that it is important that MSIs are sufficiently funded while should also try to develop *fund-rising strategy*.

2.4. MSI and Green Space Performance

Several studies found that involving multi-stakeholders or various actors led to a better performance of urban green spaces. A study by Baud & Danalakshmi in 2007 about Governance in Urban Environmental Management states that "*multi-stakeholders arrangements between government and other actors are recognized as a major instrument*" in urban environmental planning and management (Baud & Danalakshmi, 2007, p.136). A study by Amelia in 2007 about green space management in Birmingham and Bandung indicates that some of successful factors behind a good performance of Birmingham green space management are good institutional structure and coordination and citizen participation. Budianto in 2007 studied the possibility to transfer green procurement policy from Canada to Indonesia and found that one of the recommendations for Indonesia based on Canada's experience is the need for a better support from public and private actors in environmental planning. A study by Iskandarsyah in 2006 about EU lessons about environmental institutions of relevant for ASEAN countries found that *EU*

has a good environmental institution which was built by applying subsidiary concept and involving many parties and stakeholders in decision making and controlling (Iskandarsyah, 2006, p. iii). In addition, a comparative study about development and management of green spaces in 26 European cities by Baycant et al., (2002) suggest that *"a collaborative and enable partnership among local authorities, local business and voluntary groups should be formed"* (p.10) to improve the quality of urban green spaces.

On the other hand, another studies also found that involving many actors will sometimes need more cost and time and sometimes threaten green space existence. It is not easy to accommodate and coordinate various interests from different stakeholder. A research by Delfin & Tang, (2006) about philanthropic strategic in green space protection, argued that *"privatization of open space may cause excessive development density"*.

2.4.1. Some Aspects of MSI Influencing Green Space Performance

Some previous studies have analyzed separately some factors related to MSI and UGSP. This study tries to collect those findings and build a conceptual framework to identify which factors have a significant influence on UGSP. In general, this study classifies these factors into internal and external. Internal factors are regarded as factors embedded to the actors (actor-centered) consisting of who the actor is (structure) and what they do (roles). Internal factors consist of other factors beyond actor-center factors.

2.4.1.1. Internal Factors

2.4.1.1.1. Structure of Stakeholder in Green Space Development and Management

UNDP (1994) defines governance *as the exercise of economic, political and administrative authority to manage a country's affairs at all levels*. Based on UNDP's classification of institution domain of governance, stakeholders of green space development and management can be classified as bellow: (Figure 2.1).

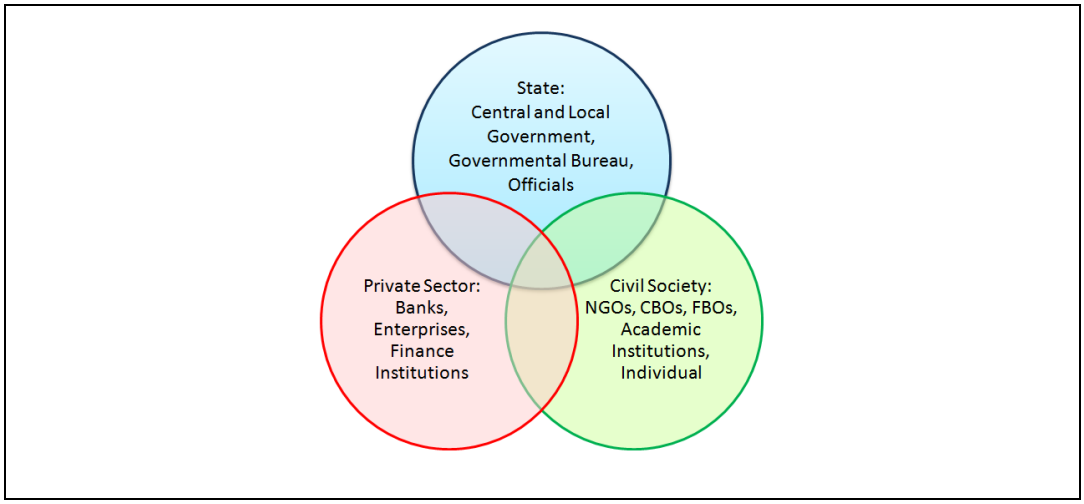


Figure 2. 1. Structure of Stakeholder

Source: adapted from UNDP (2004)

http://mirror.undp.org/magnet/policy/chapter1.htm#b

a) State

The state consists of the elected government and an executive branch function mainly to control and exert force, be responsible for public services and enable condition for green space development and management by establishing legal regulatory framework. Grey (1996) in Jim (2000) argued that government plays a vital role in balancing conflict of interests among stakeholders and making sure that community's needs are not neglected. In this study, the state includes all types of government from the local level to the national level.

b) Private sectors

Private sector is part of national economic which is not under direct state control (as defined by OALD, 2005). Private sector runs its activity based on profit orientation. It comprises of bank, enterprises, manufactures contributed to green space development

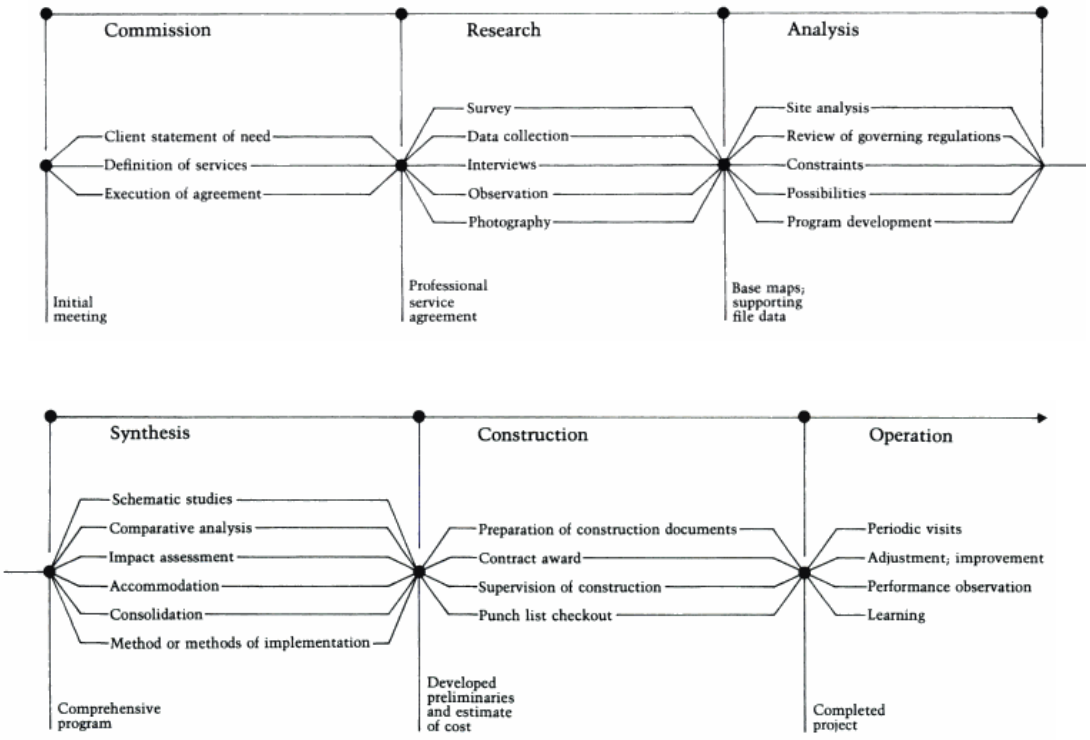
c) Society

Civil society can be an individual or groups. "Civil society is thus more than just society. It is the part of society that connects individuals with the public realm and the state - it is the political face of society" (UNDP, 2004). Philanthropists mostly found in American urban green space development is kind of individual society contributed to urban green spaces. While groups

of society can be in the form of Non-Governmental Organizations (NGOs), Community Based Organizations (CBOs), Faith Based Organization (FBOs) and actors from academic institutions.

2.4.1.1.2.Roles of Stakeholder in Green Space Development and Management

MSI can be implemented in all steps of green space development and management. (Simonds, 1998) elaborates a scheme of landscape architecture (green space) planning and design for professional landscape architect which can be seen in figure 2.2.



Source: Simond (1998) pp 128-129

Figure 2. 2. The Planning Design Process for Architecture, Landscape Architecture, Engineering

Commission is the preparation step of a project where the planner and client hold an initial meeting to get the same vision about the project. Research is the process when planner gives his/her professional service agreement by collecting all the information needed by conducting site survey, interview, observation of certain

object/ issue/ photograph, etc. This step can also be classified as data inventory. The next step is analysis where the planner analyzes all the data from inventory process; try to find potencies, constraints and amenities of the site. Base map and supporting file data are output of this step. Synthesis is a comprehensive program based on data analysis, in which the planner formulate schematic studies, comparative analysis, impact assessment, accommodation and consolidation for certain issue and method of implementation. The next step is construction. In this step, the planner develops a preliminaries and estimate cost of the project such as preparing construction and contract document, supervision and punch list check out. The final process is implementation of the project design accompanied by periodic visit to control the implementation, adjustment and improvement, performance observation. This whole process can also be a learning process for the planner to improve his/her capability.

Based on this classification, this study classifies urban green space development into three general steps: planning/design, implementation, maintenance. Planning and design are combined into one category because those processes are in line. Management aspect of urban green space includes input for management plan and financial support. Explanation of roles of MSI in each step of urban green space development and management can be elaborated as follow:

a) Planning/design

Planning and design are the early process of urban green space development and management. Early involvement of multi-stakeholder is very important because it will create a better view point among stakeholders. Furthermore it can create a strong view of inclusiveness, transparency, equity and commitment among stakeholders (Hemmati, 2002). The role of multi-stakeholder in this step can be seen for instance in collaborative design conducted by university students of Texas, USA who collaborated with home owner association and local government to create a master plan for neighborhood open space (Teal, et al., 1998). Another example is that environmental nonprofit organizations in Los Angeles have also influenced the definition of parks and open space in the area, and shaped the ideology

of what kinds of parks and open spaces are appropriate and where, and affected land-use decisions (Pincetl, 2003).

b) Implementation

In implementation, stakeholders participate in transforming the design into a real green space for instance the construction of parks, tree planting, etc. For instance, Tokyo urban forest restoration project involved citizen and private developer in street tree planting activity (Cheng et al., 2006); birders began working to restore the hedge in the mid-1980s by planting additional honeysuckle shrubs to preserve the birds in Chicago (Gobster, 2001).

c) Maintenance

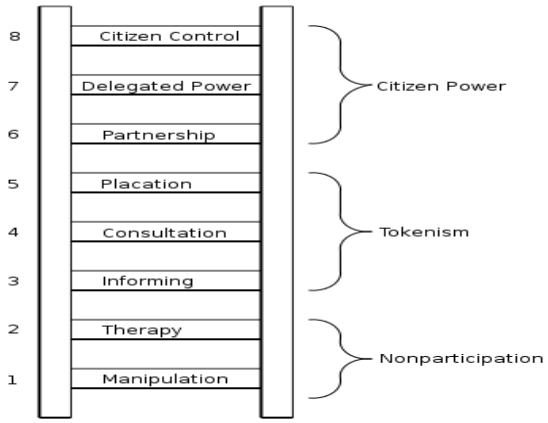
In maintenance process, stakeholders participate in taking care of existing green spaces for instance by pruning, watering, cleaning and replanting green spaces area. Gobster (2001) gives some example of participatory ecological restoration activities at Montrose Point, Chicago in terms of project maintenance such as pruning and weeding of the Magic Hedge, seeding old road bed with prairie grasses etc.

d) Input for Management Plan and Financial Support

In this category, stakeholders are involved in giving some ideas for green space management or providing financial support for green space development. For instance, the state and philanthropists in San Francisco Bay California provided some funds for green space acquisitions (Hollis & Fulton, 2002).

The involvement of multi-stakeholder in green space development and management considers all levels of participation based on Arnstein's Ladder of Participation. Arnstein (1969) classified the level of participation into non participation, tokenism and citizen power. Furthermore, Arnstein elaborated non participation level consisting of manipulation and therapy, enable powerholders to "educate" or "cure" the participants. In its implementation, non participation equals to top down planning. In tokenism participation, people have opportunity

to be heart/consulted and informed. It implication in green space development and management can be seen in integrating community's input in green space design. In the level of citizen power participation, citizens get a chance to enter a partnership and get delegated power or get the power of major decision making (full managerial power). A partnership between government and developers in developing recreational open spaces is an example of this type of participation. This level of participation is illustrated in Figure 2.3.



Source: Arnstein (1969)

Figure 2. 3. Ladder of Participation

2.4.1.2. External Factors

2.4.1.2.1. Legal Basis/Regulation

Regulation about green space becomes a legal basis to trigger green space development and management. Baycan-Levent & Nijkamp (2004) argue that based on the result of several case studies, development and management of urban green spaces have a critical need for policy. Policy can be a signal of potential collaborative commitment among stakeholders, so that, by committing to the policy, governments can reduce uncertainty and gain cooperation with various stakeholders (Smith, 2007). Furthermore, Smith argues that green space policy will provide an excellent opportunity for collaborative partnerships since very few local governments are able to protect land without the help of outside partners such as NGOs and private sectors.

2.4.1.2.2. Good Leadership

A good leadership is a key issue to the success of collaboration efforts in greenway planning (Ryan et al., 2006). It is also applicable for urban green open space in general. Furthermore Ryan et al., argue that it is the duty of leaders to manage the collaboration effort and empower the stakeholder. That's why, it is important for the leaders in collaborative process to have skill, relationships and vision to manage stakeholder interest into perceived goal (Foster-Fisherman et al., 2001 in Ryan, et al., 2006). Heinelt, et al., (2006) suggest that urban leadership will facilitate and secure community involvement contributing to positive policy outcome.

2.4.1.2.3. Good Financial Basis

Hemmati (2002) argues that many MSIs (MSP or Multi-stakeholder Process in his terms) encounter funding problems. Many collaborative projects were hindered by lack of funding. For instance in the case of greenway development in Ottawa, administrative and financial constraints caused the greenways plan has been somewhat stalled and none of the corridor are fully completed (Erickson, 2004).

That's why, *It is important that MSPs are sufficiently funded and that developing fund-raising strategies and targets are part of the design process, taking into account the requirements of various stakeholder groups* (Hemmati, 2002; p. 120).

According to Fletcher (2009), basically urban green space development and management need two kind of funds: capital and revenue. Capital consists of fund to pay the construction, improvement, renovation and equipment while revenue str funds to pay for the general maintenance and staffing. Because the availability of funds is important, it is important for urban green space manager to find alternative sources of funding through partnerships, trust, local charges and taxes.

Fletcher (2009; p.5) also argues that in urban green space development and management, *high quality is not always the result of high spending.* City planners can reduce funding for instance by choosing low maintenance wild flower in green space design. But we cannot ignore that the availability of funding is

important in every step of development including urban green space although it will not always quarantee the success story of such a project.

2.4.1.2.4. Capabilities of stakeholder

Skill and basic knowledge of the stakeholders will also influence their contribution to green space performance. A study by Brody et al., (2004) which measures the collective planning capabilities of local jurisdictions to manage ecological systems in southern Florida found a positive correlation between wealth and plan quality. They argued that wealthier, resource rich population will contribute to higher plan quality due to better planning staffs and development.

2.5. Conceptual Framework

The conceptualization of the framework of urban green space performance indicators and MSI's aspects which influence urban green space performance can be concluded in Figure 2.4. Capability of stakeholder is not included in this framework because it will not be used in further analysis due to the difficulty to quantify this indicator from the secondary data.

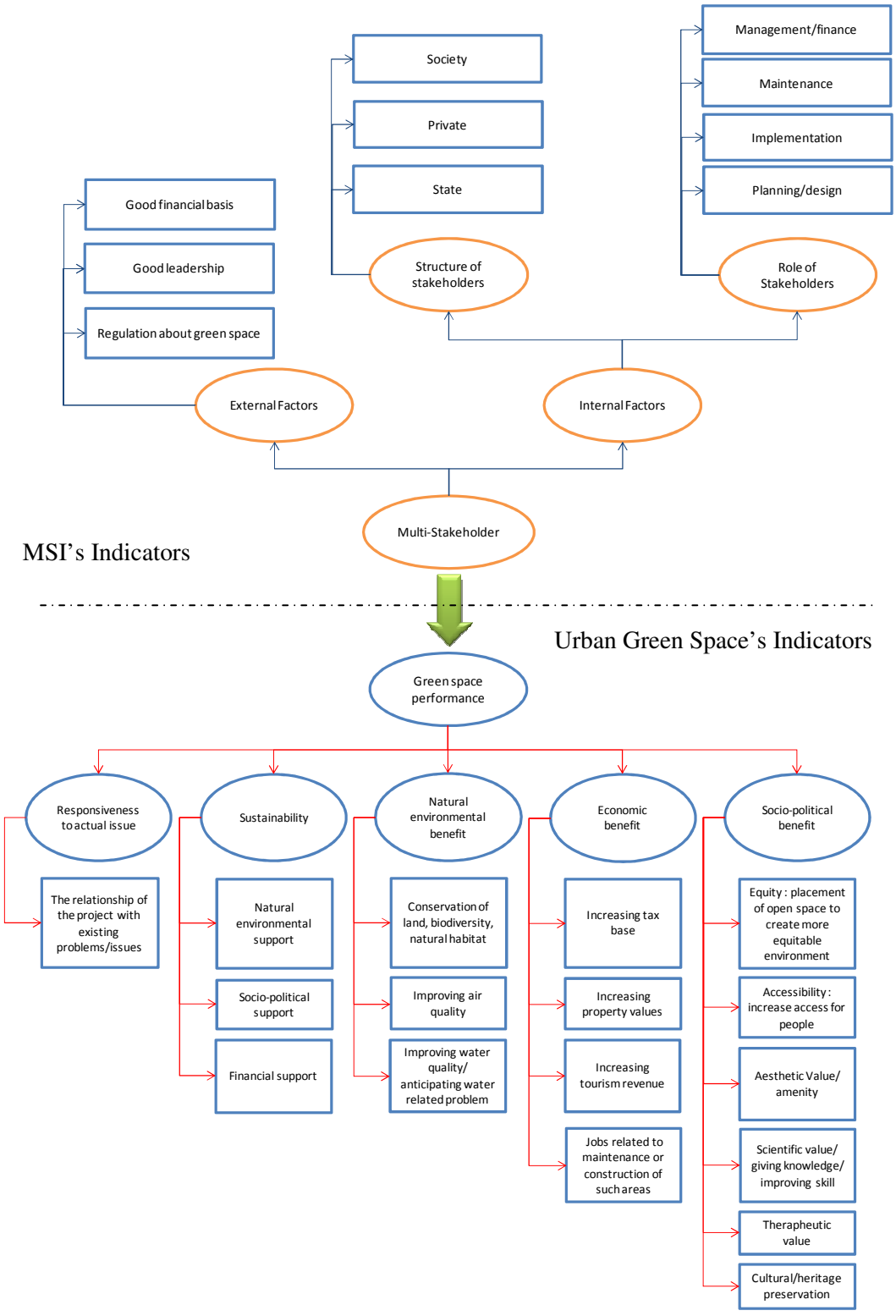


Figure 2. 4. Indicators of Urban Green Spaces Performance and MSI
Source: Drawn by Author

In general, Figure 2.4 classified all indicators into broad categories consisting of indicators of MSI and indicator of urban green space performance assessment. Circle shapes indicate the classification of indicators while rectangular shapes indicate the measured indicators.

CHAPTER III
METHODOLOGY

This study uses mixed method in its analytical process. Tashakkori & Teddie (1998; p.17) define mixed method studies as *studies that combine qualitative and quantitative approaches into the research methodology of a single study or multiphased study*. Tashakkori & Teddie argue that one of main data analytic strategies in mixed methods is converting qualitative data into quntitative data or vise versa. Referring to scenarios of mixed method developed by Ulin et al., (1996) in Tashakkori & Teddie (1998; p.44), this study will use qualitative measures to develop quantitative tools (*quantitizing technique*) as illustrated in Figure 3.1.

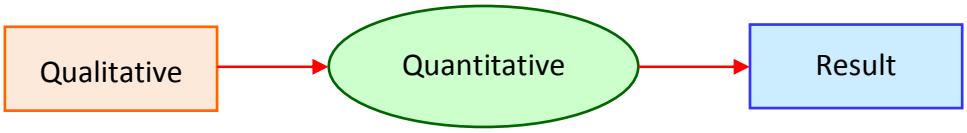


Figure 3. 1**.** Qualitative Measures to Develop Quantitative Tools
Source: Ulin et al., (1996) in Tashakkori & Teddie (1998; p.44)

Although adapted some methodologies and conceptual framework from other authors, the technique used in this study is unique in a sense as it is among few studies using mixed methods to analyzed urban green space development and management, particularly focused on the relationship of UGSP of MSI. The following part of this chapter will explain the steps of this methodology.

3.1. Population and Sample

The population of this study is urban green space institution all over the world. The element of this study is "the studies about MSI in urban green space development and management" themselves while unit of analysis is urban green space institution elaborated in previous studies[2]. Since all of the data depends on

[2] Babbie (2007) defines population as the aggregation of elements from which the sample is actually selected, unit of analysis as people or things whose characteristics observed by social researcher and element of the research as unit about which information is collected and provides the basis of analysis. Element is used in data selection while unit of analysis is used in data analysis.

the result of previous studies, sampling will be much influenced by the availability of relevant studies, meaning studies having the information or characteristics needed in analysis (Little et al., 2008).Data Collection

All of the data used in this study are secondary data searched from Isi Web of Knowledge, Scopus and Picarta. Isi Web of Knowledge and Scopus are the comprehensive databases which link to other databases such as Elsevier, Sagepub, Ebscohost and Willey Interscience. Picarta is Dutch Database which also links to Dutch university libraries and other databases such as Informaworld and Willey Interscience. Journal articles found in one database will sometimes also be found in other databases so that they overlap each other, resulting in large number of journal articles at the beginning (20.522 journal articles). However, this process will avoid the possibility of losing important information.

To get focus on data searching process, some inclusion and exclusion criteria were developed (Table 3.1). Based on its objective, this study will only select journal articles which talk about urban green space development and management (encompasing several types of green space) while also deal with MSI in their projects. To get a broader insight, this study will include all cases from both developed and developing countries.

The data were searched by using some combination of key words. The word “green space” is sometimes being used in different term in different studies such as “greenspace”, “open space”, and “urban park”. These five terms are combined with key words related to multi-stakeholder involvement such as “participatory”, “participation”, “governance”, “stakeholder”, “partnership”, “collaboration”, “institution”, “management” and “planning”. Some of those key words seem too general but they were used in order not to miss some relevant studies.

Table 3. 1. Inclusion and exclusion criteria:

Inclusion Criteria	Exclusion Criteria
topic	
Studies reporting the relationship of participatory/multi-stakeholders involvement and green space performance	Others
Type of green space	
Urban green space	Others (Forest, agricultural lands, rural green spaces)
Type of urban green space to include	
Public parks and gardens; - Urban parks, urban forest - Community gardens and allotments; - Urban planting and landscaping; - Sports fields - Green path/routes and trails - Brownfield sites - National parks and other wilderness environments - Recreation parks	- Private and domestic gardens
Types of stakeholders	
- State - Private sectors: bank, corporate, enterprises - Society: NGOs, FBOs, CBOs, individual	
Location	
Both developed and developing countries	
Language	
English	Others
Time Frame	
all	
Source of database	
- Isi Web of Knowledge, Picarta, Scopus - Available online or in RUG library	

Source: Synthesized from literature

First selection of journal articles were conducted based on the combination of those keywords resulting at 20.522 journal articles. In the second step, these journal articles were selected based on their relevant tittles and abstracts resulting in 40 journal articles. In the next steps, these 40 journal articles were filtered based on the availability of urban green space performance and MSI indicators that they have in their contents, resulting at 29 journal articles. These 29 journal articles contain 42 urban green space cases. List of the projects and journals can bee seen in Appendix 1 and the flow of data searching in this study is illustrated in Figure 3. 2 below:

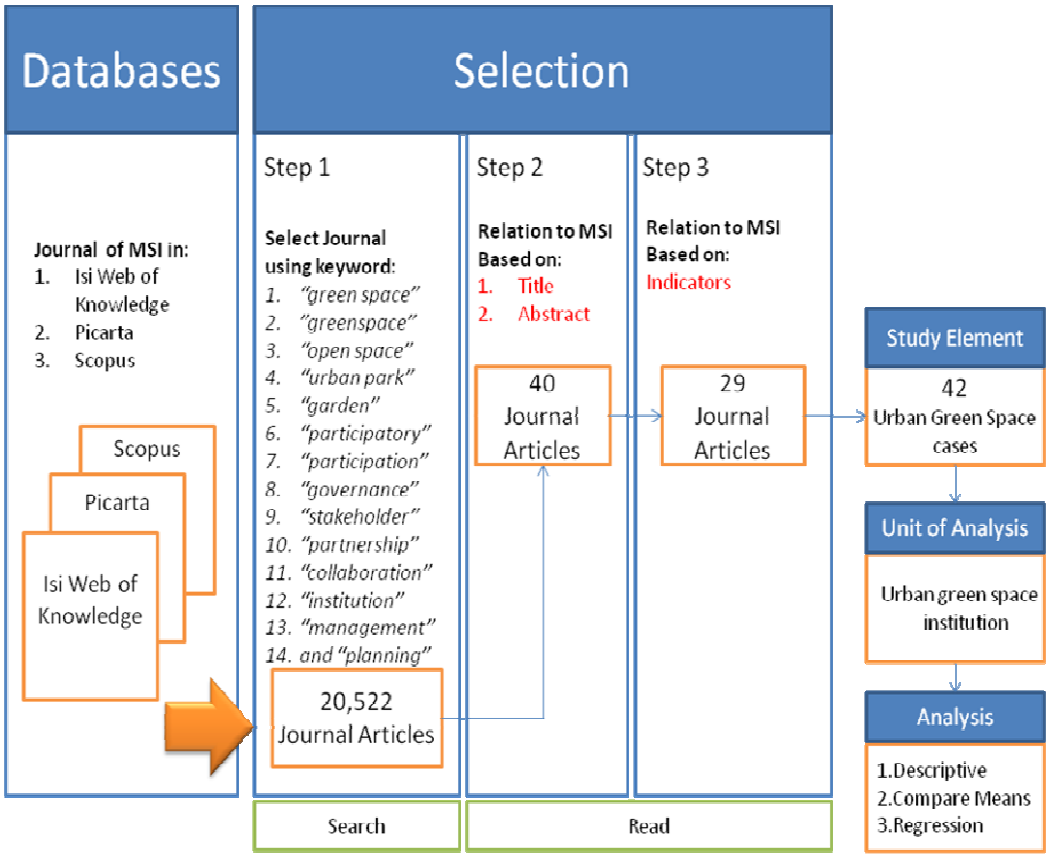


Figure 3. 2. Sampling Process and Unit of Analysis
Source: Drawn by Author

3.2. Transforming Qualitative Data into Quantitative Measurements

The data about UGSP's and MSI's indicators available in the 42 cases are qualitative data consisting of descriptive explanations. These indicators were transformed into quantitative measurements as elaborated below:

3.2.1. Scoring

The UGSPs of the 42 cases were scored based on five general principles of UGSP. Performance indicators in this study are adapted from the framework developed by Denters & Klok (2006) combined with the framework developed by Baycant et al., (2002 and 2004) as elaborated in Chapter II. The five principles and their explanations are shown in Table 3.2.

Table 3. 2. Principles as Green Space Performance's Indicators

No	General Principle	Explanatory
A	Responsiveness to actual issues	- The relationship of the project with existing problems/issues: a better project is project which meet its original goal or ability to solve its original problems
B	Sustainability	- Natural environmental support: the project will sustain when there is a natural environmental support such as slope, soil condition, water condition, etc. - Socio-political support: the project will more sustain when it has socio-political support such as public acceptance and good leadership. - Financial support: the project will more sustain when it has a good financial basis
C	Natural environmental benefit	- Conservation of land, biodiversity, natural habitat: green space project contributes to provision and protection of natural habitat, for instance the establishment of green network, providing place for bird to nest etc - Improving air quality: green space project can provide a better air quality particularly from plants used in the project - Improving water quality/minimizing water-related problems: green space project can improve water quality through the ability or plants to absorb water and filter the pollutant. Green space project such as riparian or green space in sloped area can minimize water related problems.
D	Economic benefit	- Increasing tax base: the establishment of green space particularly recreational green space, housing estate, etc will increase tax base revenue - Increasing property values: the value of property closed to green space location is usually higher than other area. - Increasing tourism revenue: the establishment of green space particularly recreational green space will increase tourism revenue, not only from tax - Jobs related to maintenance and construction of such area: the implementation of urban green space project will offer some physical jobs for local people
E	Socio-cultural benefit	- Equity : placement of open space to create more equitable environment - Accessibility : the establishment of green space project should provide a better access for people - Aesthetic value: instead of functional, green space

	project should also be aesthetics. - Giving knowledge/skill: green space project can provide a valuable knowledge particularly related to basis natural environmental knowledge - Therapeutic value: the contribution of urban green space to health - Cultural/heritage preservation: green space project can also function as cultural heritage preservation particularly located in heritage site

Source: adapted from Denters & Klok (2006) & Baycant et al., (2002 and 2004)

Based on above mentioned indicators, the following equation of urban green space performance has been developed.

$$UGSP = f(Re + Su + Na + Ec + So)$$

UGSP = Urban Green Space Performance
Re = Responsiveness to actual issues
Su = Sustainability
Na = Natural environmental benefit
Ec = Economic benefit
So = Socio-political benefit

This scoring techique is adapted from the research by Floress et al., (2009) who assessed the quality of greenways planning in North Indiana based on three categories. Codes used in that study as well as in this study are:

- 0 when the principle was not mentioned or explicitly stated as low
- 1 when the principle was implicitly stated
- 2 when the principle was explicitly stated

The principle was scored 0 when the principle was not mentioned or explicitly stated as low, for instance "*poor designed and poorly maintain; natural environmental quality have been neglected*" with the assumption that when it is not stated, the principle was considered not so important in the success or fail story of certain urban green space performance. The principle was scored 1 when the principle was implicitly stated, for instance "*picnic areas artificial swimming lake and a major interpretive facility that serves both the general public and school group; cultural sites have been successfully protected*". Since there were picnic areas, artificial swimming lake, it is assumed they will contribute to aesthetic and amenity value for the site so that the aesthetic and amenity value

will be scored as 1. The principle was scored 2 when it is explicitly stated, for instance "*Primary environmental corridors consist of elongated areas in the landscape which encompass the most important and highest quality elements of the regional natural resource base, including the best remaining surface waters and associated undeveloped flood lands and shore lands, woodlands, wetlands, wildlife habitat, groundwater recharge areas, and scenic, historic, scientific and cultural sites"*.

3.2.2. Ranking

The scores of urban green space performance were ranked into four categories; "excellent", "good", "fair" and "poor", adopted from the research by Floress et al., (2009). The scores are ranked using SPSS menu version 16, with the classification as follow:

- 4 – 9 are ranked as 1 (poor performance quality)
- 10 – 15 are ranked as 2 (fair performance quality)
- 16 – 21 are ranked as 3 (good performance quality)
- 22 - 27 are ranked as 4 (excellent performance quality)

Based on the data range, the lowest score is 4 and the highest score is 24 (range = 20, meaning that the interval of each level = 6). The result of scoring and ranking is shown in Appendix 2. To check the reliability of these codes, some of the statements in journal articles were quoted (Appendix 3).

3.3. Quantitative Analysis

Data of scoring and ranking from previous mentioned steps will be used in quantitative analysis. The following sub sections explain the variables and quantitative methods used in this study while further explanation of such methods can be shown in Appendix 3.

3.3.1. Variables

For the next quantitative analysis, the variables are generally classified into dependent and independent variables. Dependent variable of this analysis is UGSP resulted from previous analysis. UGSP consists of two of kinds of measurements, scores and ranks. Scores are the composite measurement of

UGSP's indicators (ranging from 4 – 24) which will be used in further quantitative analysis. Ranks ("excellent", "good", "fair" and "bad") indicate the classification of UGSP to help interpretation in descriptive statistics explanation. Independent variables consist of ten element of MSI which theoretically influence UGSP as elaborated in Chapter II. All variables and their simple explanation used in quantitative analysis are shown in Table 3.6.

Table 3. 3. Dependent and independent Variables

Dependent Variable	y_i	= performance of urban green space	Dependent variable is composite measurement from 5 principles of performance consisted of 17 indicators
Independent Variable	x_{1i}	= state : In this study state includes all types of government from local level to national level	**Internal Factor:** Structure of Stakeholder
	x_{2i}	= private : private sectors comprise of bank, enterprises, manufactures contributed to green space development	
	x_{3i}	= society: Civil society can be an individual (e.g. philanthropists) or groups (NGOs, CBOs, FBOs, academic institution)	
	x_{4i}	= planning/design: Stakeholder can participate in planning and design process by providing input/idea for planning or make a collaborative design with planner	**Internal Factor:** Role of Stakeholder
	x_{5i}	= implementation: Stakeholders participate in transforming the design into a real green space for instance the construction of parks, tree planting, etc	
	x_{6i}	= maintenance: Stakeholders participate in taking care of existing green spaces for instance by pruning, watering, cleaning and replanting green spaces area	
	x_{7i}	= input for management and financial support: Stakeholders are involved in giving some idea for green space management or providing financial support for green space development	
	x_{8i}	= regulation about green space: Regulation about green space become a legal basis which trigger green space development and management	**External Factor**
	x_{9i}	= Good leadership: a good leadership will contribute to the legitimacy of multi-stakeholder in green spaces development	
	x_{10i}	= good financial basis: many studies also argue that one main constraints in green spaces development is the availability of funding	

Source: Synthesized from literature

The values of X are stated as 0, 1, 2, 3. This coding methods is adopted from Sandstrom (2002) who evaluated green plans in Swedish Cities to find out how multiple roles of green infrastructure has been perceived. X will coded as 0 when the variable is not mentioned or explicitly stated as no. X will be coded as 1 when the variable is implicitly stated. X will be coded as 2 when the variables is explicitly stated but not mentioned as strong. X will be coded as 3 when the variable is explicitly stated and mentioned as strong or important. The result of coding in this phase is illustrated in Appendix 4. To check the reliability of this coding, some sentences in the journal were quoted (Appendix 5).

3.3.2. Method

3.3.2.1.Descriptive Statistics

Descriptive statistics can be used to summarize a set of data (Studenmund, 2001). Furthermore, Cross Tabulation analysis was conducted to see the association between variables (Hinton et al., 2004). In this study, Cross Tabulation Analysis is used to see the association between UGSP's levels with their different characteristics, such as locations, types and year of projects in order to give more complementary explanation about the existing data.

3.3.2.2.Compare Mean Analysis

Compare mean analysis can be used to evaluate whether there are significant differences between several group means of the dependent variable. This analysis can be done by using one-way ANOVA. When the overall F test was significant (meaning, significant differences were detected among the three groups or p-value or Sig < α) Post-hoc tests were needed to determine which differences among the pair wise comparisons were significant. In this study, compare mean analysis aims to see the different UGSP score based on different codes of MSI's indicators.

3.3.2.3.Pearson Correlation

Correlation Coefficient (*r*) functions to analyze to what extent one variable is related to another (Hinton et al, 2004). Correlation information between variables will also be important in the regression, the next step or analysis, particularly in

analyzing multicollinearity assumption. In this study, Pearson Correlation is used to examine the relationships between MSI's indicators.

3.3.2.4.Multiple Linear Regression

Multiple linear regression (MLR) is a statistical analysis that can be used to explore the relationships between a dependent variable and a set of independent variables (Maddala, 1977; Studenmund, 2001). In this study, MLR is used to explored the relationship between urban green space performance with MSI's indicators by using backward elimination. *"Bakcward elimination first estimates the equation all the variable in and progressively eliminate variables with partial-correlation coefficients or the t ratios or F ratios less than a specified value"* (Maddala, 1977: p. 125). It means that this method will not totally ignored independent variables which have partial correlation that might give influence to dependent variables.

3.4. Discussion

This step will explain why and how such output occurs in the analysis. This section will provide arguments based on the context of the unit analysis confirmed or rejected by theory or the result of previous studies.

CHAPTER IV
RESULT AND DISCUSSION

4.1. Data Description

The data consist of 42 urban green space cases from 29 journal articles. Referring to project's characteristics found in the journal articles, these 42 urban green space cases can be classified based on their geographical locations, year of journal publications, year of the projects and their green space types. Based on their geographical locations, the 42 urban green space cases are located in 15 countries spreading in four continents[3]. Most of the cases are located in USA (28.6%). When classified based on their continents, the data are mostly distributed in America and Europe. Figure 4.1 illustrates the distribution of data based on geographical location.

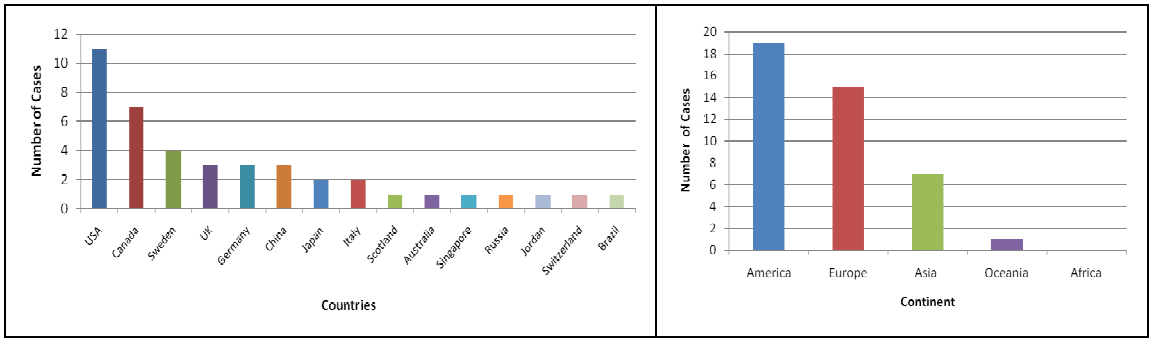


Figure 4. 1. Distribution of Data based on Geographical Category
Source: Drawn by author

Referring to Classification of Countries based on income by World Bank[4], only 12% of urban green space cases are located in developing countries (Porto Alegre, Brazil; Abu Nazer, Jordan; The City of St. Petersburg, Russia, Hong Kong and

[3] The Classification based on continent refers to the classification by UN (2009) : http://unstats.un.org/unsd/methods/m49/m49regin.htm

[4] Based on their income in July 2009, World Bank Classifies countries into Low-income economies, Lower-middle-income economies, Upper-middle-income economies, High-income economies, High-income OECD members. In this study, Low income economies countries are regarded as Undeveloped Emerging Economy Countries (TIER 1); Lower-middle-income economies, Upper-middle-income countries are regarded as developing countries or Economies Moving to Self-Sufficiency (TIER 2) while both high income economies categories are merged into one category developed countries.

http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20420458~menuPK:64133156~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html

Beijing, China). The other 88% urban green space cases are located in developed countries. In this study, none of the cases found located in less developed countries.

Figure 4.2 illustrates data distribution based on the year of journal publications and based on the year of the projects. Most of journal articles were published in 2006. The range of the project is wide, from 1920s up to 2010. Most of the projects are conducted between 1991- 2000. Some of the cases such as Greenway projects of Milwaukee *(USA) and* Ottawa *(Canada),* Brownfiled re-developments *of* Erlenmatt *(Switzerland),* Gleisdreieck *(Germany)* King's Cross Central *(UK,)* Zentrale Bahnfl ächen'*(Germany)* and Stadtraum Hauptbahnhof *(Germany)* on going projects. For these cases year of the projects considered in this study is the initial year of the projects.

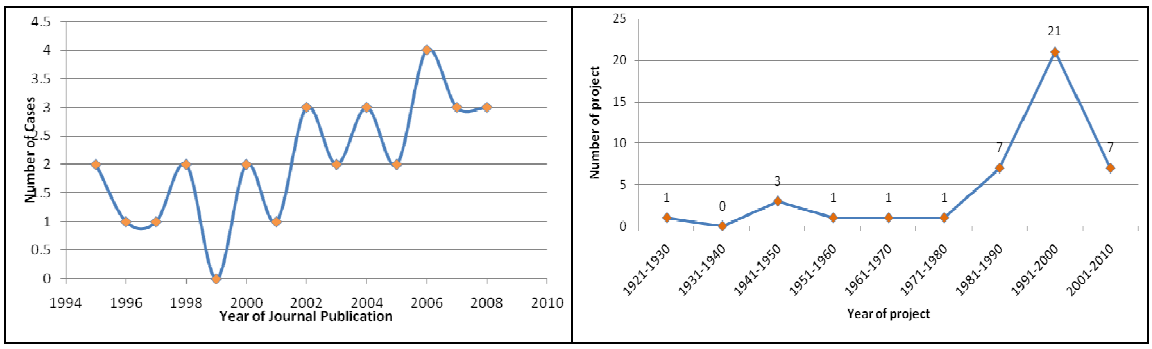


Figure 4. 2 Distribution of urban green space cases based on the year of journal publication and the year of project
Source: Drawn by Author

As shown in Figure 4.2, the number of green spaces cases has increased drastically in the period of 1990s. It can be related to the growing of environmental awareness of planner and policy maker to increase the quality of life. For instance, in North America and Europe, policy makers and planners have been paying more attention to pursue sustainable development and improve the quality of life (Sausa, 2002). This growing concern culminated in United Nations Conference on Environment and Development, Rio de Janeiro, 1992, when Brundtland Commission popularized the term sustainable development.

Based on their types, urban green space cases in this study can be classified into eight categories as shown in Figure 4.3.

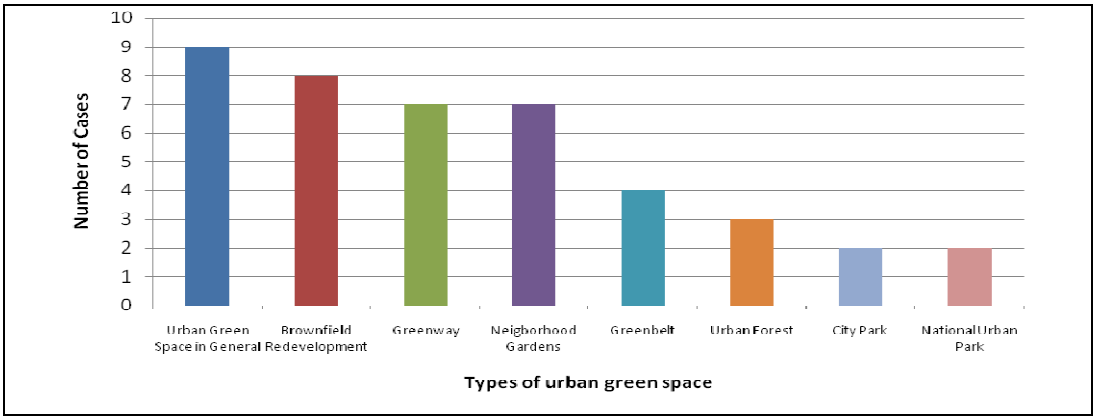


Figure 4. 3 Distribution of Urban Green Space Cases Based on Their Type of Green Space
Source: Drawn by author

The cases are mostly urban green space in general (9 cases, equals to 21,4% of data). Other types of urban green space which are often become the object of green space research are brownfield redevelopment (8 cases, equals to 19,0% of data), greenway (7 cases, equals to 16,7% of data) and neighborhood gardens (7 cases, equals to 16,7% of data).

According to Sousa (2003), among some projects of sustainable development and improving quality of life, brownfield development has gained a good political support since 1980s. In line with this awareness, the scientific literature particularly in US and Canada also paid more attention on this issue, concentrated either on its technical aspects or on policies wchich stimulate economic and development activities (Sousa, 2003). In addition, in the past two decades, there was also a growing attention to study general environmental issue in industrialized countries and to neighborhood space in particular (Abu-Gazzeh, 1996).

One case in stockholm, golf cource, is classified into neighborhood garden in this study because it is managed by the neigbhorhood, diffirent from other golf courses that are usually managed by private sectors.

4.2. Scoring and Ranking Results of UGSP

Scores and ranks of UGSP are derived from the transformation of qualitative data into quantitative measurements. As mentioned in Chapter III, to help in the interpretation of UGSP, the composite scores of UGSP are classified into four categories of ranks; "excellent", "good", "fair" and "poor". The following sub section will explain UGSP of the data based on their ranks.

UGSPs of these 42 cases are shown in Table 4.1.

Table 4. 1. Urban Green Spaces Performance

No	Excellent	Good	Fair	Poor	Total
(1)	(2)	(3)	(4)	(5)	(6)
1	Brownfield Toronto *(Canada)*	Travis Country *(USA)*	Puerto Alegro *(Brazil)*	Abu Nuseir *(Jordan)*	
2		Leicester *(UK)*	Florence *(Italy)*	Sterling Forest *(USA)*	
3		Edinburgh *(UK)*	Bologna *(Italy)*	San Fransisco Bay Area *(USA)*	
4		Fish Creek *(Canada)*	N.Capital *(Canada)*	UNP Stockholm *(Sweden)*	
5		Meewasin Valley *(USA)*	Milwaukee *(USA)*	Golf Stockholm *(Sweden)*	
6		Greater Toronto *(Canada)*	Ottawa *(Canada)*	Portland *(USA)*	
7		Singapore *(Singapore)*	Los Angeles *(USA)*	Erlenmatt *(Switzerland)*	
8		UNP Stockholm *(Sweden)*	Troy Garden *(USA)*	Gleisdreieck *(Germany)*	
9		St. Petersburg *(Russia)*	Victoria Harbour Hong Kong, *(China)*	King's Cross Central *(UK)*	
10		Montrose point, Chicagi *(USA)*	Red River Valley *(USA)*	Zentrale Bahnfl ächen', *(Germany)*	
11		Don Valley *(Canada)*	USA *(USA)*	Stadtraum Hauptbahnhof *(Germany)*	
12			Tokyo *(Japan)*	Sweden *(Sweden)*	
13			Hiroshima *(Japan)*	Beijing 1st Plan *(China)*	
14			King William Park *(Australia)*	California *(USA)*	
15				Hongkong *(China)*	
16				Garnethil Park *(Scotland)*	
Frequency	1	11	14	16	42
Percentage	2.38	26.19	33.33	38.10	100

Source: Own Data Analysis

Scoring result shows that only one case (2.38%) constituting as excellent project (Brownfield development in Toronto). Sousa (2003) argues that Toronto is a city that has been proactive in converting brownfield into green spaces by focusing on enhancing the green space inventory and overall quality of life in urban area.

Eleven other cases (equals to 26.19% of data) are ranked as good projects. Fourteen cases (equals to 33.33% of data) are ranked as fair projects while the other sixteen cases (equals to 38.10% of data) are ranked as poor.

As mentioned in the earlier part of this chapter, the data are varied based on their geographical locations, years of projects and urban green space types. The following explanation aims to see the distribution of UGSP based on such different categories.

4.2.1. UGSP and Country

As mentioned in the earliner part of Chapter IV, the data are distributed within 15 countries. Cross Tabulation analysis depicts the distribution of UGSP's levels based on their locations which aim to explain the association between urban green space location (country) and their performances (Table 4.2).

Table 4. 2 Cross-tabulation between Country and Level of Performance

Country	Level of Performance				Total
	1 Poor	2 Fair	3 Good	4 Excellent	
1 USA	4	5	2	-	11
2 Canada	-	2	4	1	7
3 Sweden	3	-	1	-	4
4 UK	1	-	2	-	3
5 Germany	3	-	-	-	3
6 China	2	1	-	-	3
7 Japan	-	2	-	-	2
8 Italy	-	2	-	-	2
9 Scotland	1	-	-	-	1
10 Australia	-	1	-	-	1
11 Singapore	-	-	1	-	1
12 Russia	-	-	1	-	1
13 Jordan	1	-	-	-	1
14 Switzerland	1	-	-	-	1
15 Brazil	-	1	-	-	1
Total	16	14	11	1	42

Source: Own data analysis

As shown in Table 4. 2, most of "good", "fair" and "excellent" UGSPs are located in USA. It might be much influenced by the distribution of data. The distribution of data is dominated by urban green space cases in USA as shown in Figure 4.1 before . It is interesting that project located in Economies Moving to Self-

Sufficiency classification can reach a better performance compared to countries categorized as developed countries.[5] For example, Brazil has a better performance ("fair")[6] compared with other projects in San Francisco, Sweden, Germany, etc. In this study, project location is not significantly influence UGSP, so it is argued that project location might not guarantee a better UGSP. This argument is confirmed by the result of Chi-Square test (Appendix 7) which indicates there is no significant relationship between UGSP and project location in this study.

4.2.2. UGSP and Year of Project

Data in this study are also varied based on their initial project's years. Cross Tabulation analysis was conducted to see the association between UGSP's levels and their project's years (Table 4.3).

Table 4. 3 Cross-tabulation Project Year and Level of Performance

Project Year	Level of Performance				Total
	1 Poor	2 Fair	3 Good	4 Excellent	
1921-1930	-	1	-	-	1
1941-1950	-	3	-	-	3
1951-1960	-	1	-	-	1
1961-1970	-	-	1	-	1
1971-1980	-	-	1	-	1
1981-1990	3	3	-	1	7
1991-2000	7	5	9	-	21
2001-2010	6	1	-	-	7
Total	16	14	11	1	42

Source: Own data Analysis

Table 4.3 shows that most of "good" projects were started on 1990s (9 cases or equals to 21.4% of data). As mentioned in data description, most of the data are also about urban green space project so that it might influence such result. Furthermore, the increase of people's environmental awareness was also started in

[5] The classification of countries refers to the classification by World Bank: Developed Countries, Economies Moving to Self-Sufficiency and Undeveloped Emerging Economy Countries

[6] In this study, Brazil has a fair green space performance while according to Manegat (2002), nowadays Puerto Alegre is famous as a large metropolitan park. Based on its source in this study, the well known success of Puerto Alegre is much indicated by its increasing quantity of green space per citizen ($14m^2$/person) while this indicators was not included in this study because not all of journal articles provide the data of urban green space quantity.

the era of 1990s so that urban green space projects get more attention. From Table 4.3 we can see that although started in 1990s - 2000s, 30.9% of the cases have "poor" performances. Based on this result, it is argued that in this study, different years of projects might not influence their performances. The result of Chi-Square test (Appendix 7) indicates there is no significant relationship between UGSP and urban green space types in this study.

4.2.3. UGSP and Types of Urban Green Spaces

The data are also varied based on their urban green space types. As done in previous sub section, Cross Tab Analysis was also run to see the association between UGSP's level and their green spaces types (Table 4.4).

Table 4. 4 Cross-tabulation Greenspace Type and Level of Performance

Greenspace type	Level of Performance				Total
	1 Poor	2 Fair	3 Good	4 Excelent	
1. General	2	4	3	-	9
2. Brownfield Redevelopment	5	1	1	1	8
3. Greenway	-	3	4	-	7
4. Neighborhood garden	4	2	1	-	7
5. Greenbelt	3	1	-	-	4
6. Urban forest	-	3	-	-	3
7. City Park	1	-	1	-	2
8. National Urban Park	1	-	1	-	2
Total	16	14	11	1	42

Source: Own data analysis

As shown in Table 4.4, "excellent" up to "poor" performances are distributed in brownfield redevelopment projects. It also can be influenced by the number of cases which is also dominated by brownfield redevelopment (see explanation of Figure 4.3). Most of the brownfield re-development projects are redevelopment of abandoned railway. Their low green space performances are also related to the main concern of their redevelopment. Altherr et al. (2007) conclude in their five case studies, that green space is given a lower priority than other function such as residential due to the strategic location of these sites. A "Good" urban green space performance is dominated by greenways project while "Fair" green space performance is dominated by urban green space in general. The result of Chi-

Square test (Appendix 7) indicates there is no significant relationship between UGSP and project year in this study.

4.3. Quantitative Analysis of UGSP and MSI indicators

The next steps of analysis aim to seek what factors of MSI significantly influence UGSP. When previous analysis about UGSP used the data of ranks ("excellent", "good", "fair" and "poor") as dependent variable, the following analysis will use scores (4-24) as the data of UGSP (dependent variable). Independent variables used are 10 indicators of MSIs extracted from literature review (see Table 3.6). Before going to further analysis, this part will start with the distribution of indicators in the data set (Table 4.5) as initial information for further analysis.

Table 4. 5. Distribution of MSI's Indicators based on Codes

MSI's Indicators	0		1		2		3		Total	
	the variable was not mentioned or explicitly stated as low		the variable was implicitly stated		the variable is explicitly stated but not mentioned as strong		the variable is explicitly stated and mentioned as strong			
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
State	-	-	7	16.7	17	40.5	18	42.9	42	100.0
Private	18	42.9	6	14.3	17	40.5	1	2.4	42	100.0
Society	5	11.9	5	11.9	14	33.3	18	42.9	42	100.0
Planning	7	16.7	3	7.1	15	35.7	17	40.5	42	100.0
Implementation	15	35.7	3	7.1	17	40.5	7	16.7	42	100.0
Maintenance	21	50.0	5	11.9	13	31.0	3	7.1	42	100.0
ManagementFund	12	28.6	7	16.7	15	35.7	8	19.0	42	100.0
Regulation	5	11.9	6	14.3	22	52.4	9	21.4	42	100.0
Leadership	39	92.9	1	2.4	-	-	2	4.8	42	100.0
Financial	30	71.4	12	28.6	-	-	0	.0	42	100.0

Source: Own Data Analysis

The code value of 0,1,2, and 3 based on statement mentioned in journal articles can be regarded as the strength of MSI's indicator position or the strength level of involvement. 3 can be regarded as "strongly involved" since it was explicitly stated in journal articles and mentioned as strong. 2 can be regarded as "involved" since it was explicitly stated but not mentioned as strong. 1 can be regarded as "less involved" since it was implicitly stated in journal articles. 0 can be regarded as not involved since it was not mentioned in journal articles.

To understand the contribution of each indicator, the interpretation will be focused on the accumulation of codes 2 and 3 since they were mentioned explicitly. Extracted from Table 4.5, there are five indicators having high percentage of code 2 and 3 (more than 50%), meaning that these indicators mentioned explicitly in the text. They are state (40.5% + 42.9% = 83.4%), society (33.3% + 42.9% = 76.2%), planning (35.7% + 40.5% = 76.2%), implementation (40.5% + 16.7% = 57.2%) and regulation (52.4% + 24.4% = 76.8%).

None of the data mentioned explicitly the existence of leadership in urban green space development and management. Only two cases explicitly state that leadership is important in urban green space projects (greenway development in Singapore and urban forest development in Hiroshima). In addition, none of the data mentioned the strong role of financial aspects of each projects. This finding is confirmed by the study by Ericson & Louisse (1997) in Ryan et al., (2006) about greenway project, argued that access to funding doesn't guarantee the successful of greenway completion. Furthermore they argued that lack of funding will not also prohibit the project to be implemented since the fund was much supported by state.

4.3.1. Compare Mean Analysis of Green Space Performance by MSI's indicators

Compare mean analysis can be used to evaluate whether there are significant different scores between several items of MSI's indicators by using one-way ANOVA of SPSS menu. The dependent variable used in this analysis is the value of UGSP's "score" (4 - 24) as the composite measurements of performance indicators. Independent variables consist of MSI's indicators which were coded with 0, 1, 2 and 3 based on statement in journal articles. This test was followed by Post Hoc Test, to identify which variables give significant influence to UGSP. Table 4.6 shows the result of mean comparison and Post Hoc Test.

Table 4. 6 Mean Comparison of Green Space Performance by MSI's indicators

Post Hoc=LSD Alpha (0.05)

MSI Indicators	Mean of Performance Score by Each Level of MSI's Indicators				F	Sig.	LSD ALPHA (0.05)	Post Hoc Tests
	0	1	2	3				
	the variable was not mentioned or explicitly stated as low	the variable was implicitly stated	the variable is explicitly stated but not mentioned as strong	the variable is explicitly stated and mentioned as strong				
State	.	12.00	11.47	13.78	1.006	.375		
Private	12.33	12.17	12.41	21.00	1.004	.402		
Society	12.00	12.80	12.29	12.83	.054	.983		
Planning	10.00	15.33	14.13	11.71	1.702	.183		
Implementation	9.93	14.00	14.94	11.71	3.388	.028	Significant	0-2
Maintenance	11.90	14.00	13.00	12.67	.284	.837		
ManagementFund	9.92	15.00	14.93	9.88	4.627	.007	Significant	0-1, 0-2,1-3, 2-3
Regulation	9.60	11.83	13.23	13.00	.787	.509		
Leadership	12.41	12.00	.	15.50	.367	.695		
Financial	12.80	11.92	.	.	.269	.607		

Source: Own Data analysis

From Table 4.6, we can see that the involvement level of state, private, society, planning, maintenance, regulation, good leadership and good financial basis will not influence the different level of performance (confirmed by P value or (Sig) ≥ 0.05). The mean figures will explain this statement. For instance, from Table 1 we can see that the differences between state involvement having code 1 with state involvement having code 2 and 3 are not so high (12 for code 1; 11.47 for code 2 ; 13.78 for code 3). It is also the same for private, society, planning, maintenance, regulation, good leadership and good financial basis. It means that whether those indicators strongly or weakly involved, they will not change the level of green space performance, for instance from "poor" to "good". It doesn't mean that those indicators will not have any contribution to the level of green space performance since mean comparison is an individual analysis of indicators. That indicator will might an influence when they collaborate. Regression analysis will confirmed this assumption.

In the other hand, the different involvement level of implementation and input for management and financial support (managementFund) will influence the level of UGSP (confirmed by P value (Sig) ≥ 0.05). Mean figure of implementation in Table 2 proves that the difference between score 0 to 2 is relatively high (9.93 and 14.94). It can be argued that the level of green space performance will be influenced by the level of implementation involvement (P ≤ 0.05). When the project was implemented, it will give the different level of performance compared to when the project was not implemented. It is a common logic finding that the different levels of project implementation can be seen in its performance. From Post Hoc Test, we can also see that the level of green space performance will vary when implementation is involved or not involved (coded as 0-2).

The different level of input for management and financial support (managementFund) will also contribute to the different level of green space performance (confirmed by P value (Sig) ≥ 0.05). The differences are more varied compared to implementation. The mean figure shows that the differences of management fund coded as 0-1, 0-2,1-3, 2-3 are relatively high (9.92-15; 9.92-14.93; 15.00-9.88; 19.93-9.88). the level of UGSP's score will vary when this managementFund change from not involved to less involved, from "not involved" to "involved", from "less involved" to "strongly involved" or from "involved" tor "strongly involved".

4.3.3. Pearson Correlation Coefficient Between MSI's indicators

Pearson Correlation coefficient is used to measure how much the one MSI's indicator varies with other indicators and how much an indicator varies with its own. This coefficient can also indicate the direction of relationship whether it is positive or negative. Table 4.7. shows correlation matrix between MSI's indicators which is intended to understand the MSI's indicator's association.

As shown in Table 4.7, there is a strong negative correlation between variable state and society (-0.611), significant at the 0.01 level (2-tailed). It can be interpreted that when the role of state increase, the role of society will decrease. When one single actor such as state is dominant in urban green space

development and management, it might supersede the role of other actors such as society.

From Table 4.7. we can also see that planning has a negative correlation with maintenance and input for management and financial support, meaning that when planning increase, the maintenance activity and input for management and . The correlation value between planning and maintenance is -0.362 which is significant at the 0.05 level and the correlation between planning and input for management and financial support is – 4.88 significant at the 0.01 level. It can be understood because planning, implementation, maintenance and input for management and financial support are the sequential process. When a project has finished, the other process such as maintenance and input for management will be more dominant.

Table 4. 7. Correlation Matrix of MSI's indicators

	State	Private	Society	Planning	Imple me-ntation	Mainte-nance	Manag ement-Fund	Regu lation 1	Leader-ship	Fi na n-cia l
State	1									
Private	0.195	1								
Society	-.611**	-0.1	1							
Planning	0.061	-0.069	0.044	1						
Implementation	0.139	0.014	-0.19	0.138	1					
Maintenance	0.111	-0.093	-0.064	-.362*	-0.045	1				
ManagementFund	-0.269	-0.168	0.1	-.488**	0.302	0.144	1			
Regulation1	-0.079	-0.078	0.039	0.025	-0.172	-0.008	0.052	1		
Leadership	0.008	-0.082	-0.018	0.034	0.14	0.047	0.128	0.17	1	
Financial	-0.156	-0.18	0.112	-0.099	-0.12	0.029	0.076	0.059	-0.081	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: Own Data analysis

4.3.4. Regression Analysis

Regression analysis in this study is used to identify some indicators of MSI which significantly influence UGSP. Regression analysis was run with SPSS version 16 using backward method. As mentioned in the earlier part of quantitative analysis, the dependent variable used in this step is the score of UGSP while independent variables are the 10 indicators of MSI. Output of this analysis is shown in Table 4.8 below.

Table 4. 8 Coefficient of Regression Analysis Using SPSS 16

MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.948	.899	.889	4.492

ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	6846.313	4	1711.578	84.832	.000
Residual	766.687	38	20.176		
Total	7613.000	42			

COEFFICIENTS[a,b]

	Unstandardized Coefficients		Standardized Coefficients		
Independent Variables	B	Std. Error	Beta	t	Sig.
State	2.138	.653	.377	3.275	.002
Society	1.404	.546	.240	2.573	.014
Implementation	1.504	.606	.200	2.481	.018
Regulation	1.494	.722	.226	2.068	.045

a. Dependent Variable: Performance

b. Linear Regression through the Origin

Source: Own Data analysis

Output of regression analysis using backward method found that some factors of MSI significantly influence green space performance are the state, society and implementation as the internal factors and green space regulation as external factors.

From this analysis we can say that the best model of green space performance will be the collaboration of state and society in green space implementation with a good regulation about green space development.

Mathematically, the model[7] of this output can be written as:

$$y_i = 2.138\,x_{1i} + 1.404x_{3_i} + 1.504\,x_{5i} + 1.494\,x_{8i}$$

Where:

y_i = performance of urban green space

x_{1i} = state ; x_{5i} = implementation

x_{3i} = society ; x_{8i} = regulation about green space

[7] Regression model in this study uses b-value of regression coefficient because according to Andy (2005; p. 127), "the b-value and their significances are important statistic to look at". Basically Andy argues that the standardized beta value can also be used but with different interpretation. The standardized beta value indicates the number of standard deviation change of the outcome as the result of one change one standard deviation of the predictor while b value indicates the number of the outcome will change because of the change of one unit predictor.

It means that when the involvement of state increase by one unit, green space performance will increase by 2.138. The increase one unit of society involvement will increase green space performance for 1.404. When the actors of green space increase their role in implementation process for one unit, green space performance will increase by 1.504 and when the availability of regulation increase by one point, green space performance will also increase for 1.494. However, this model can not be directly concluded as valid before diagnostic of regression assumption and test of hypothesis are conducted. The diagnostic of regression assumption will be elaborated in the following sub section.

4.3.4.1. Diagnostic of Assumption

Diagnostic of assumption was run to check whether the model generated by regression analysis meet all of regression assumption. The assumptions are normality, no heteroschedasticity, no multicollinearity and independency of error as elaborated below:

a) Normality

This assumption requested that the error terms ε_i should be normally distributed. Normal Probability Plot illustrated in Figure 4.1. From the histogram we can see that the curve is in a bell-shaped and from the PP-plot we can see that all errors are distributed alongside the straight line. These histogram and PP-plot indicate that all errors are normally distributed so that the normality assumption is met.

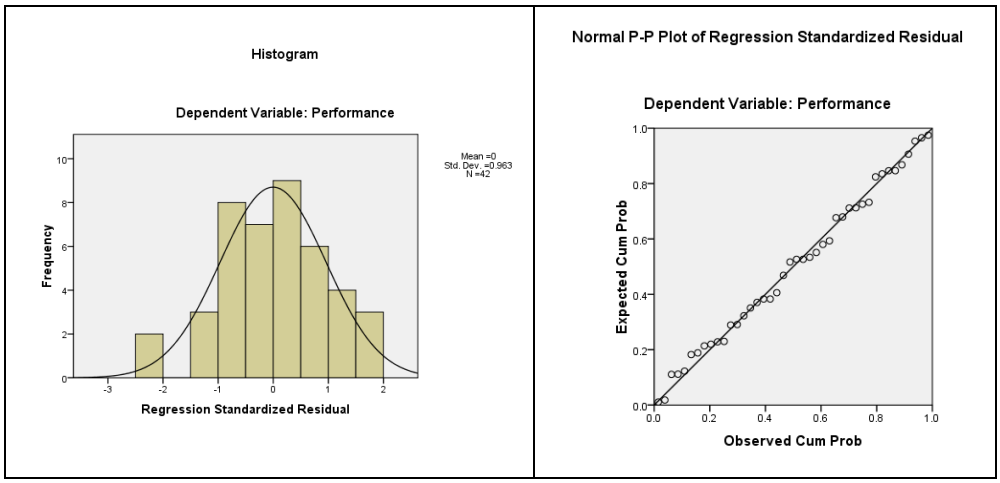


Figure 4. 1 Normal Probability Plot
Source: Own Data Analysis

b) No Heteroscedasticity

This assumption requires that the variance (dispersion) of observations of the error terms should be equal (Homosedastic). Figure 4.2 illustrates that the distribution of variances does not shape a certain pattern (random), meaning that there is no heteroschedasticity.

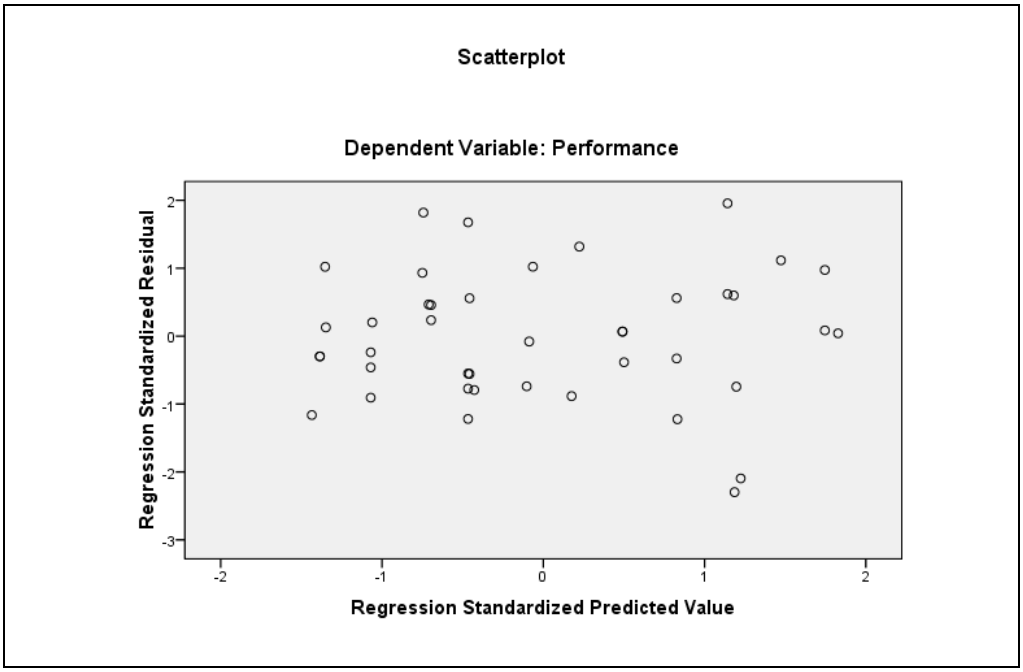


Figure 4. 2 Diagnostic Plot of Heterosedasticity
Source: Own Data Analysis

c) No Multicolinearity

Regression analysis requires there is no multicollinearity between independent variables indicated by the value of VIF. the value of VIF = 0-10 indicates no multicollinearity among variables.

Table 4. 9. Multicolinearity Diagnostic using Variance Inflation Factor (VIF)

Coefficients[a,b]

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
State	2.138	.653	.377	3.275	.002	.200	5.005
Society	1.404	.546	.240	2.573	.014	.304	3.290
Implementation	1.504	.606	.200	2.481	.018	.409	2.442
Regulation1	1.494	.722	.226	2.068	.045	.221	4.523

a. Dependent Variable: Performance ; b. Linear Regression through the Origin
Source: Own Data Analysis

From the output of regression in table 4.9, we can see that the values of VIF are 5.5005 for state, 3.290 for society, 2.442 for implementation and 4.523 for regulation. All of these values are located between 0-10 meaning that there is no multicollinearity between independent variables.

d) Independency of error

This assumption requires there is no autocorrelation between errors. Durbin Watson Table provides lower and upper critical value (*dl* and *du*) for 40 or 45 cases. The interpolation of these values for 42 cases will be elaborated in table 4.10 and the output of Durbin Watson test is shown in Table 4.11:

Table 4. 10. Critical Values of the Durbin-Watson Statistic
k = Number of Independent Variables (Excluding the Intercept) = 4 and α = 5 %

n	dL	dU
40	1.29	1.72
42	*a*	*b*
45	1.34	1.72

Source: DW-Table

We can calculate values of a and b using interpolation formula

- $\frac{42-40}{45-40} = \frac{a-1.29}{1.34-1.29}$ so

  $a = \left[\frac{42-40}{45-40}\, x\, (1.34-1.29)\right] + 1.29 = 1.31$

- $\frac{42-40}{45-40} = \frac{b-1.72}{1.72-1.72}$ so

  $b = \left[\frac{42-40}{45-40}\, x\, (1.72-1.72)\right] + 1.72 = 1.72$

Finally, the critical values of Durbin-Watson statistic for 42 cases are:

$dl = 1.31$

$du = 1.72$

Table 4. 11. Out put of Durbin Watson Test

Model Summary[c,d]

Model	R	R Square[b]	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.948[a]	.899	.889	4.49177	1.234

a. Predictors: Regulation1, Implementation, Society, State

b. For regression through the origin (the no-intercept model), R Square measures the proportion of the variability in the dependent variable about the origin explained by regression. This CANNOT be compared to R Square for models which include an intercept.

c. Dependent Variable: Performance

d. Linear Regression through the Origin

Source: Own Data Analysis

According to Gujarati (2004), If $d < d_{L,\alpha}$, there is statistical evidence that the error terms are positively autocorrelated. It means that the assumption that errors are not autocorrelated is violated so that we need to do an adjustment procedure for regression model to cure this effect of autocorrelation. According to Cambridge Systematics (1997; p.113), one of the methods provided by SPSS to overcome autocorrelation is Cochrane Orcutt. In this study, Cochrane-Orcutt procedure is run by using the syntax in Appendix 5. Table 12 shows the Output of Durbin Watson Test based on Cochrane-Orcutt method.

Table 4. 12. Output of Durbin Watson Test in Cochrane-Orcutt

Model Fit Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.919	.844	.822	4.146	1.866

The Cochrane-Orcutt estimation method is used.

Source: Own Data Analysis

As shown in Table 4.12, d value is 1.866. The value of d (1.866) greater than $d_{U,\alpha}$ (1.72) meaning that there is statistical evidence that the error terms are **not** autocorrelated and the regression assumption is not violated.

Adjusted Model

Cohrane-Orcutt Method produces a model which has already excluded the effect of autocorrelation. Coefficients for this model is summarized in Table 4.13

Table 4. 13. Coefficient of Regression Model Based on Cohrane-Orcutt Method

Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
State	2.324	.626	.419	3.713	.001
Society	1.324	.472	.245	2.804	.008
Implementation	1.520	.555	.235	2.737	.010
Regulation1	1.187	.685	.187	1.731	.092

The Cochrane-Orcutt estimation method is used.

Source: Own Data analysis

Mathematically we can make this model[8] as:

$$y_i = 2.324x_{1i} + 1.324x_{3i} + 1.520\,x_{5i} + 1.187\,x_{8i}$$

Where:

y_i = performance of urban green space

x_{1i} = state

x_{3i} = society

x_{5i} = implementation

x_{8i} = regulation about green space

Before making further interpretation of this model, it is better to check whether this model is valid or not by using test of hypothesis.

4.3.4.2. Test of Hypothesis

Test of hypothesis functions as the confirmation of data analysis. In this study, these tests consist of F-test and t-test which will be elaborated as follow.

[8] As used in previous regression model, this regression model also uses b value as the coefficient of predictors

a) Test for Significance of the Overall Regression Model (The F-test)

F test is intended to show that the overall of the estimated equation is statistically significant so that we can reject the null hypothesis. Rejecting the null hypothesis means that the independents variables as a group (Xs) are related to dependent variable (y). The hypotheses of this analysis are:

$$H_0 : \beta_1 = \beta_3 = \beta_5 = \beta_8 = 0$$
$$H_A : \text{At least one } \beta_i \neq 0, i = 1,3,5,8$$

Anova of Regression using Cochrane-Orcutt estimation method is showed in Table 4.14

Table 4. 14. Anova of Regression using Cochrane-Orcutt estimation method

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	3344.751	4	836.188	48.64386	0.00
Residual	618.835	36	17.19		

The Cochrane-Orcutt estimation method is used.

Source: Own Data Analysis

As shown in Table 4.14, the p-value (Sig.) is 0.00 which is less than α (0.1) meaning that we can reject the null hypothesis. Thus it is believed that there is sufficient evidence to conclude that at least one of the β's is not zero

b) Test on Individual Regression Coefficients (t Test)

t-Test is used to test the hypothesis about individual regression slope, to see whether the value of regression coefficient is different from mean value of sample. The hypotheses in this analysis are:

$$H_0 : \beta_i = 0$$
$$H_A : \beta_i \neq 0;\ i = 1, 3, 5, 8$$

As shown in Table 4.13, all p values (Sig) of independent variables are 0.001 for state, 0.008 for society, 0.010 for implementation and 0.092 for

regulation. All of these values are lower than α (α = 0.1) meaning that we can reject the null hypothesis. Thus it is believed that there is sufficient evidence to conclude that β_i is not zero

Based on the result of F-test and t-test, it can be argued that the model of regression produced by Regression using Cochrane-Orcutt estimation method is valid. Table 4.12 shows that the value of R^2 is 0.844 meaning that these four variables can explain 84.44% variance of UGSP. The interpretations of this model are as follow. When the involvement of state increase by one unit, green space performance will increase by 2.324; the increase one unit of society involvement will increase green space performance for 1.324; when the actors of green space increase their role in implementation process for one unit, green space performance will increase by 1.520 and when the availability of regulation increase by one point, green space performance will also increase for 1.187.

4.4. Discussion

The following sub section aims to analyze why such indicators of MSI found in regression analysis significantly influence UGSP. Furthermore, this subsection will also explain how such factors can influence UGSP.

4.4.1. Why Such Factors Significantly Influence Urban Green Space Performance

As mentioned in Chapter II, UGSP in this study is measured by using indicators of urban green space quality. Regression analysis found some factors of MSI which significantly influence the UGSP are state/government, society, implementation and regulation. Why such factors influential will be elaborated separately in the following parts.

4.4.1.1.State/Government

One of the main points demonstrated in this study is that the government plays a critical role in UGSP. The positive coefficient of regression analysis suggests that the increase role of government contribute to better UGSP. Basically, the strong role of government in urban green space development and management is caused

by the nature of urban green space projects in this study. All of urban green space cases are public green space, meaning that green space accessible for public whether it is owned by government, private sector or society. Sousa (2003) argues that urban green space projects designed to serve general public do not generate private revenue. It can be understood that most of green space projects are non-profit oriented so that they most of them are supplied by the government. As has been elaborated in Chapter II, the function of urban green space mostly concerns on the issue of social function such as providing place for gathering, playing grounds, aesthetic value and knowledge about environment; or planning role such as providing noise or view barrier, connector between different land use function; or ecological function such as habitat preservation, microclimate amelioration and water resource protection. We can not ignore that urban green space will also provide economic benefit such as providing edible landscape, increasing property value, recreational revenue and providing job in its construction process, but this function is not as dominant as other non economic functions.

Another factors caused the strong role of government is because most of the projects is brownfield re-development despite urban green space in general. Figure 4.3 shows that 8 of 42 cases talk about brownfield re-development. Strong role of government in brownfield re-development is important because brownfield sites are prone to their existing and potential hazards due to their previous function. Brownfield redevelopments in Toronto as the project having excellent performance were mostly conducted by municipal governments. Sousa (2003) argues that all of brownfield re-development projects in Toronto were carried out by the public sector, with the majority of sites redeveloped by the Municipal Government's Park Department. The Toronto Region Conservation Authority involved in projects dealing with flood plain area. The Ontario Ministry of Natural Resources and Federal Government involved in waterfront projects.

In addition, strong government control is also significant in greenbelt development. 4 of 43 cases in this study were dealing with greenbelt development and management. The concept of greenbelt is physical boundaries of a city consisting of green open spaces which initially function to control urban sprawl.

A strong government control in greenbelt development and management will be important due to its nature as city's boundaries and controlling urban sprawl. For instance many Chinese cities such as Beijing, Shanghai, Guangzhou, Chongqing and Senyang have adopted greenbelt concept with the strong emphasize of government control (Yang & Junxing, 2007).

Although the role of governments is important in urban green space development and management, it doesn't mean that they should become a single actor. The result of Pearson correlation matrix as previously shown in Table 4.7 showing the negative correlation between state and society can be interpreted that when the role of state increase the role of society will decrease. The case of Florence, Italy (case 3) proved that bureaucratic structure of government in green space development in 1980s resulted on the declining quality of urban green spaces due to a low political salience from private sectors and society. First Plan of greenbelt development in Beijing (case 37) was also considered fail due to lack of participation by vital stakeholders when the plan was developed. That's why there should be a balance between the role of state and other stakeholders.

4.4.1.2. Society

Another important aspect of MSI which contributes of UGSP is the involvement of society. As has been elaborated in Chapter II, society in urban green space development and management can consist of individual such as philanthropist, resident or organization such as student of a university and NGOs. 76.2% of data explicitly stated the involvement of society in urban green space development and management (see explanation of Figure 4.5). The involvement of society will also very important in urban green space development and management due to the nature of urban green space as something dedicated to serve general public.

The significant involvement of society in this study can also be influenced by Growing popularity of NGOs such as Land Trust in USA and Europe due to dissatisfaction of regulatory planning failure. According to Bendana (2006), most of NGOs in the world have been established since the era of 1990s and officially described by United Nation in 2004. As shown in Figure 4.1 and Figure 4.2, most of the projects are located in USA, Canada and Europe which were mostly

conducted in the year of 2000s. The participation of NGO can be seen in the case Edinburgh (case 6) and Leicester (case 5) where Edinburgh Greenbelt Trust and Environt (NGOs) are among key actors influencing urban green space policy. In the case of Los Angeles urban green space project (case 17), environmental nonprofits have also influenced the definition of parks and open space in the area, and shaped the ideology urban green space development. In Portland urban green space project (case 26), The City Repair Project (NGO) supported local community in urban green space development and management for instance by conducting workshops.

In addition, the significant involvement of society might also be influenced by the existence of philanthropic tradition in US. As shown in Figure 4.1, most of the data are located in US while according to Pincetl (2003), in the early 20th century, the philanthropic tradition was strong in USA with emphasized on land donation or purchase through fund rising. In addition, according to Delfin & Tang (2006), the growing popularity of philanthropist in USA dated back to the wave of environmentalism[9] in 1980s. The Philanthropists' participation in this study can be seen in fund provision for development and management of Sterling Forest, New York (case 8) and San Francisco Bay Area (case 9), brownfield redevelopment in Toronto, Canada (case 14), purchase of land and refurbishment of parks and recreations area in Los Angeles (case 17), and urban landscape development in California (case 38).

4.4.1.3.Implementation

Another factor of MSI significantly influence UGSP is the implementation of urban green space planning. Basically, MSI can be conducted in every step of urban green space development and management, from planning, implementation, maintenance and input for management and financial support. But this study argues that implementation is more important among others. The result of compare mean analysis in Table 4.6 indicates that there is a significant different of

[9] According to Delfin & Tang (2006), environmentalism phase is indicated by the existence of bottom-up, place-based effort and public private partnership in land conversion initiatives.

project performance when the implementation step not was mentioned with when the implementation was not mentioned in data set (there is significant difference of UGSP between implementation coded as 0 and 2).

Implementation of urban green space plan is important because, as argued by Porteous (1996), implementation will involve various human senses so contribute to create a more positive cognitive image. This positive cognitive image will create sense of belonging so that human will take care of what they thing as theirs. How this process works will be elaborated in the next section of discussion.

Good implementation of urban green space development and management in this study can be seen for instance in the case of Edinburg (case 6) and Leicester (case 5) in which NGOs The Edinburgh Green Belt Trust, Environt participate in tree planting, participate in a number of conservation projects, the creation and improvement of foot path and stabling hedgerows. Another example is A Waterfront Regeneration Trust (NGO) which processed the implementation of the Lake Ontario Greenway Strategy (case 13). In Los Angeles (case 17), wealthy local businessmen such as John Bixby, oil tycoon and founder of Long Beach, also created parks through gifts. In Red River Valley greenway (case 24), local citizens were involved in creating demonstration garden. In Hiroshima (case 28), Beijing (case 37) and Hongkong (case 39), citizens participated in tree planting activity.

Another previous study also found the importance of plan implementation for projects dealing with MSI. Burby (2003) in Steelman and Hess (2009), who analyzed the link between stakeholder participation in planning and implementation of plans in natural hazards policy concludes that “plans were stronger and more likely to be implemented when there was greater stakeholder involvement”. Since all of the data are about MSIs, the dominant role of implementation itself will also significant. This finding is confirmed by Steelman and Hess (2009) who analyze the relationship between plan quality and implementation in USA. Their finding indicates that implementation might be

more important than plan quality to successful open space protection because a good plan doesn't guarantee its good implementation.

4.4.1.4. Regulation

The next factor significantly influence UGSP is regulation. The availability of an appropriate regulation about urban green space will contribute to its better performance which is also strongly related to the role of government. All of urban green space projects in this study involve government in their development and management process and as argued in the explanation about state/government, government plays critical roles in UGSP. One of the critical roles of government is providing regulation as operational framework of development. It can be argued that when government plays a critical role, the existence of regulation will also be strong.

In addition, regulation can also functions as the tool of communication and argument as Mazza and Rydin (1997) said as interpretive function. Some case in this study can give some examples for this statement. For instance, since 1948, Leicester District Council and Leicestershire County Council (case 5) have implemented a framework and work programme for urban green space in the city by using policies consisting of defined landscape standards and the level of play provision based on space needed .The case of greenbelt development in China (case 37) gives an example that flawed policy has caused the failure of this greenbelt project achieving its objectives. According to Yang & Jinzing (2007), The Municipal Government of Beijing issued a policy allowing farmers to sell some parts of their lands in greenbelt area to developers in order to get more fund for resettlement. This decision resulted on rapid growth of built up areas in the greenbelt.

Altherr at.al (2007) proved that regulation is important in influencing the allocation of green space, particularly in brownfield re-development projects in five case studies from Switzerland, Germany and UK. In Switzerland, the existence of red list species such as spotted kanapweed (*Centera stoebe*) and sand-grasshopper (*Sphingonotus caerulans*) in the boundaries of "Erlenmatt", Basel

(case 30) contributed to the creation of nature conservation in that area. Similarly, the existence of red list species in "Stadtraum HB", Zurich (case 34) contributed to the establishment of nature protection corridor along the railroads. In Germany, green space allocation was influenced by the appearance of protected habitat types such as the damage happened during the development of "Potsdamer Platz" left one protected habitat type. London, is the city having a legal regulation about brownfield re-development. The, the re-development of "King Cross Central" London (case 32) was conducted based on this legally binding law.

The contribution of regulation to urban green space performance can also be seen in the case of Singapore (case 18). Nowadays, Singapore is known as a Garden City with luxurious greenery along its streets and many pocket parks (Tan, 2006). According to Tan, this performance dates from 1963 when The Prime Minister Mr. Lee Kuan Yew launched Tree Planting Day. In 1971, Singapore's Planning Authority created the first Concept Plan to guide Singapore's development including urban green space. The concept plan was regularly reviewed and updated into master plan. The guiding principles are ambition to have 0.8 ha park per 1000 persons and creating open space in a network system.

4.4.2. How Such Factors Influence Urban Green Space Performance

Sub section 4.4.1. has elaborated why state, society, implementation and regulation significantly influence UGRP. This section aims to answer the research question about how some indicators of MSI influence UGSP.

4.4.2.1. State

Government contributes to a better performance of urban green space development and management by providing a legal framework. This statement is confirmed by UNDP (2004), arguing state/government functions to control and exert force, be responsible for public services, create and enable environment for sustainable development. According to UNDP, creating and enabling environment for sustainable development (including urban green space development and management) mean that government *establish and maintain stable and effective*

regulatory frameworks for public and private activities, *ensuring stability and equity in the market place, mediating interest for the public goods and providing effective and accountable public services*. However, strong role of government in urban green space development and management doesn't mean that government is the one in decision making.

The success story of government in providing development framework can be seen in the case of Puerto Alegre. This city were able to overcome some crisis of low-middle income nations such as poverty, unemployment, corruption even urban green space provision because of a good management of the city over the last 12 years (Manegat, 2002). The government realized that technical planning approaches are not suitable for current democratic situation so that the government revised urban planning and management including environmental planning and management. According to Manegat (2002) p. 182, main components of this changing are *citizen participation, public environmental management programmes, comprehensive knowledge of Porto Alegre's natural and build environments and environmental education*. Now the city has a high standard green space/person, $14m^2$/person (Manegat, 2002) and is famous for its participatory budgeting system.

In addition, the strong role of government is important in coordinating and mediating plural interest of various stakeholders involved. As Altherr et al., (2007) explained, private sector such as developer tends to pay attention on the quality of urban green space in increasing value added of an area; citizen mainly concerns on the daily use of space while environmentalist mostly concerns on nature conservation. Sousa (2003) argues that lack of coordination among governmental agencies and other stakeholders is one of barriers in greening brownfield sites. Furthermore UNDP argue that government can also empower the people in order to be responsive to citizen's demand. The implementation of all these government's role is strongly related to a strong commitment and political will of the actor itself.

4.4.2.2 Society

By involving society, urban green space planner will know exactly what people's need and perception about urban green space so that planner can provide an appropriate provision of urban green space. Society involvement in urban green space development and management can be seen in these some cases. In Travis Country (case 1), landscape architecture students collaborated with Home Owner Association and local government to create a master plan for that neighborhood (Teal et al., 1995).

The involvement of society can also have contribution in the provision of funding or management of state resources. Society can be involved individually or in groups. Philanthropists' gift or their contribution to provide funds for urban green space development and management as found in many cases in USA, is an example of individual type of society participation while the role of NGOs is an example of group participation. According to Pincetl (2003), civil society institution such as charitable organization and NGOs participate in mobilizing state resources by creating such a business coalition. In the case of Los Angeles (case 17), the NGOs have effectively become a partners in park planning. The land trust as civil society institution applied for government funding to manage park and open spaces in Los Angeles.

Kjaersdam (1988) in Erickson (1996) argues based on Danish experience that public participation in planning process made the plan stable and effective due to the creation of collective awareness about the plan. Different input from different perspective of society will enrich urban green space quality.

In addition, society involvement will build a sense of belonging about urban green space. Jones (1990) in Erickson (1996) argue based on American experience that the greater public involvement in urban green space development and management, the greater their sense of ownership will be. The greater their sense of belonging, the greater their willingness to nurture urban green spaces. These sense of belonging and willingness to take care of urban green space come from positive cognitive images that they have. Philip (1995) said that involving community to participate in beautification project and improvement programs

(green open space development) will encourage pride and sense of ownership. Many researches as collected by Abu-Gazzeh (1996) such as Rudofsky, 1997; Whyte, 1980; Appleyard, 1980, 1981 about neighborhood proved that neighborhood space which gives meaning for people, provides public access, stimulate use and participation will be loved and cared carefully by the users.

Porteous (1977) argue that the most important thing in the creation sense of belonging is that action in the real world takes place on the basis of the cognitive image of the real world, held by the individual. According to Porteous, this positive cognitive image can be explained by logical behavioral framework as follow:

- Stimuli from the environment beyond the environed organism are perceived by the organism. Perception means the process becoming aware through the sense of existence of stimuli. Perception is phycologically constrained, can be varied by experience and training can increase the level of awareness
- Percept is then apperceived in the brain. Apperception is the process of interpreting something perceived in previous experience. This percept is matched by image already held.
- After being matched and understood, the percept becomes cognition, something known by the organism.
- If the response to the initial stimulus occurs, it is made with reference to recognize image.

The establishment of this sense of belonging can also be interpreted as socio and political support for urban green space development and management. Burby and May (1998) in Steelman and Hess (2009) argue that socio political support from society will increase the commitment of public official to implement urban and green space plan.

4.4.2.3. Implementation

Implementation activities are important to make the project “visible” by producing some physical results (Nilsson et al., 2007). Implementation means a

step to bring about plan objectives. In urban green space development, implementation part of the project consists of site clearing, site construction such as the creation of pathways, water bodies, pergolas, patios; and site plantings. Such implementations activities will involve vision, sound, smell and tactility. According to Rock & Harris in Porteous (1996), more than eighty per cent of our sensory input is visual. Perception and cognitive image will be also much influenced by vision. By actively involved in implementation process, stakeholders will see the real output of what they do. Furthermore, sound provide dynamism and sense of reality (Porteous 1996) while smell is a direct, specific and unrealizable experience (Than, 1982 in Porteous, 1996) which plugged directly into the limbic of brain (Gloor, 1978 in Porteous, 1996) and tactility is the haptic sense producing a touchscape (Porteous, 1996). When many senses involved, the stimuli to create a better positive image will be higher so that will contribute to a better sense of belonging.

4.4.2.4. Regulation

Regulation about urban green space contributes to its better performance by providing urban green space actors an operational framework. Regulation can also trigger or even force participation and control development of developers. Developer's interest is mostly pursuing economic benefit from urban green space development and management. The implementation of policy or regulation will control their development activities while encourage them to establish green open space. For instance in China, Beijing Municipal Government issued Executive Order which order developer to construct green space on two-third of their land (case 37).

Regulation can also function as the tool of communication and argument. Regarding these function of regulation, urban green space policy should be supported by the availability of urban green space data such as the nature of existing urban green spaces including their quantity, quality, acreage, topography, location, function and user. This argument is confirmed by the cases of British and Italian urban green spaces as elaborated by Mazza & Rydin (1997). British cities have a better performance of their urban green spaces than Italian cities do.

According to Mazza and Rydin (1997), general strategies of urban green space development and management in British cities were supported by the availability of detailed data about quantity, quality and the nature of its urban green space, which were not so available in Italian cities.

Table 4. 15 The Summary of MSI's Indicators which Significantly Influence UGSP

Variables (What)	Reason		Cases
	Why	How	
(1)	(2)	(3)	(4)
1. State	- The nature of urban green space mostly as non profitable products - Brownfield re-development is relatively dominant in data while brownfield re-development needs strong government control due to existing and potential hazards of the sites. - Greenbelt development constitute 3 of 43 data while greenbelt need strong government control due to the establishment of administrative boundaries	- By setting up development framework - By coordinating plural interest	Brownfield redevelopments in Toronto; Beijing; Puerto Alegre; Tokyo; Hiroshima
2. Society	- The nature of urban green space as public service - Growing popularity of land trust (NGOs) due to dissatisfaction of regulatory planning failure - Philanthropist tradition in US	- By accommodating people's need - By helping to manage state resource - Alternative funding - Collective awareness - sense of belonging from positive cognitive image	Travis Country; Sterling Forest, New York and San Francisco Bay Area; brownfield redevelopment in Toronto; California; In Portland; Troy Garden
3. Implement ation	- Implementation will make the project "visible" - More senses involved will create more positive cognitive image - Previous study argue that plans were stronger and more likely to be implemented when there was greater stakeholder involvement	- positive cognitive image will create sense of belonging	Edinburg and Leicester; Lake Ontario Greenway Strategy; Los Angeles; Red River Valley greenway; Hiroshima, Beijing and Hongkong
4. Regulation	- State is involved in all projects while one main roles of state is providing regulation as operational framework - Giving operational framework	- Operational framework make the process clear - By enhancing public manager's credibility - Regulation can be as media of communication	"Erlenmatt", Basel; "Stadtraum HB", Zurich; "Potsdamer Platz"; "King Cross Central" London; Singapore Greenway;

Source: Own Data analysis

In addition, the availability of regulation can also enhance government's credibility. Smith (2007) argues that useful and reliable institutions will provide the basis for cooperation and a good institutional arrangement will allow managers and politicians to commits to a course of actions resulted in the increase of collaboration.

To give a simple explanation in this discussion section, the summarize of what factors of MSIs which significantly influence UGSP, why and how such factors give significant influence will be shown in Table 4.15. This summary will include some urban green space projects found in this study as the example.

CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

This study found that MSIs do not always contribute to a better UGSP. Based on scoring and ranking, only one cases (2.38%) constituting as excellent project (Brownfield development in Toronto). 26.19% other cases are ranked as good project, 33.33% are ranked as fair project while another 38.10% cases are ranked as poor. It is interesting that project located in Economies Moving to Self-Sufficiency classification country can reach a better performance compared to countries categorized as developed countries. For example, Brazil has a better performance compared other projects in San Francisco, Sweden, Germany, etc. This finding is confirmed by Chi-Square test from Crosstab analysis that project location is not significant to UGSP.

Some factors of MSI which significantly influence urban green space performance are state, society, implementation and regulation about green space. The best model of green space performance will be met when there is collaboration between state and society in green space implementation with a good regulation about green space development.

The significant influence of role of state and society can be understood because most of green space project are non-profit oriented project. State influences urban green space development and management by providing a legal framework, empowering people and coordinating various interests and controlling over project implementation and management In addition, most of the projects are owned by government. Involvement of society will contribute to positive cognitive image ended up at the establishment of sense of belonging which is important in creating and taking care of urban green space projects. Regulation is needed as legal basis for green space development and management.

5.2. Recommendations

This study suggest that in developing and managing urban green space dealing with MSIs, the structure of stakeholder, that urban green space manager needs to pay more attention on, are state and society. The harmonious collaboration of state and society will lead to a better UGSP. This collaboration will be optimal in plan implementation. In addition, the role of regulation should also be considered as the operational framework and communication tools of the collaboration. Among those factors, this study demonstrates that state still has such crucial roles in urban green space development and management due to the nature of urban green space projects as mostly the non profit projects. The success story of Brazil located in *Economies Moving to Self-Sufficiency* classification can have a better performance compared to some countries classified as developed countries due to the strong role of government to develop a good collaboration can be an interesting point to be noted.

However, state or government shouldn't be the single actor in urban green space development and management. It is also interesting that some success stories or urban green space development and management in USA were much influenced by the existence of philanthropic tradition in USA as a kind of public participation in urban green space development and management. It can be a potential point for other countries to explore such strategy in urban green space development and management.

MSI is needed with different implementation in different context referred to different types of participation by Arnstein in 1969. Decision makers need to consider local context whether to implement MSI in the level of citizen power, tokenism or even non participation. MSI doesn't mean involving every stakeholder in decision making. MSI means involving concerned or relevant stakeholders in such urban green space development and management process.

Due to context-dependent nature of planning including urban green space development and management, this lesson can not be implemented without caution. Because of the limitation of data available in online journal articles, the unit of analysis in this study can not be categorized into more specific context.

Further study will be needed to compare the relationship of MSI and UGSP in different categories of urban green space projects.

The data which came from secondary source and were judged based on the sentences in journal articles are regarded as the weakness of this study because sometimes different authors use different style to express an issue. It will be a good possibility for the next studies to analyze the relationship of urban green space performance and MSI by using primary data such interviews and questionnaires. The lessons learned from this study can be useful for further development and management of urban green space with MSIs and conceptual framework and mixed methods technique developed in this study, can be implemented in general various urban green space planning context.

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