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PERFORMANCE EVALUATION OF CITY PARKS BASED ON SUSTAINABLE LANDSCAPE DESIGN IN JAKARTA

EVALUASI KINERJA TAMAN KOTA BERDASARKAN DESAIN LANDSCAPE BERKELANJUTAN DI JAKARTA

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ABSTRAK

Ruang terbuka hijau, khususnya taman kota, sangat dibutuhkan masyarakat dan kota untuk meminimalkan masalah lingkungan dan meningkatkan kualitas hidup. Taman kota di Jakarta belum dapat melakukannya. Penelitian ini bertujuan untuk mengevaluasi kinerja taman kota berbasis desain lanskap berkelanjutan untuk melihat sejauh mana taman kota telah memerankan fungsi yang terdapat dalam Pedoman Pembangunan dan Pengembangan Ruang Terbuka Hijau tahun 2019 secara berkelanjutan. Penelitian terdahulu telah mengukur kinerja taman kota dalam memenuhi fungsinya terkait aspek ekologi, kesehatan/kualitas hidup, ekonomi, estetis, sosial budaya. Penelitian ini menambahkan aspek mitigasi sebagai salah satu variabel pengukuran dan sekaligus sebagai kebaruan dari penelitian. Penelitian akan dilakukan pada 10 Taman Kota di Jakarta. Instrumen evaluasi menggunakan kuesioner yang berisi variabel evaluasi penilaian kinerja taman kota yang memadukan seluruh aspek dari fungsi taman kota dengan prinsip desain lanskap berkelanjutan dan observasi. Berdasarkan evaluasi penilaian kinerja taman kota berbasis desain lanskap berkelanjutan, belum ada kinerja dari taman kota dan fungsi yang diperankannya termasuk dalam kategori baik dan secara observasi terlihat kondisi taman kota kurang terpelihara dan suram. Rekomendasi penelitian adalah diperlukan adanya penelitian lebih lanjut untuk mengkaji lebih dalam tentang faktor yang menjadi akar penyebab tidak tercapainya fungsi dan keberlanjutan taman kota.

***Kata Kunci** : Taman Kota, Desain Lanskap Berkelanjutan, Evaluasi Kinerja Taman Kota*

ABSTRACT

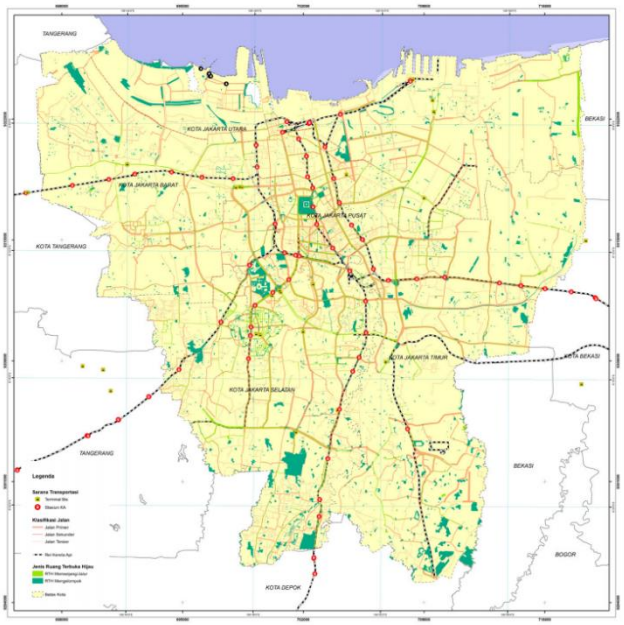
Green open spaces, especially urban parks, are needed by the community and the city to minimize environmental problems and improve life quality. City parks in Jakarta have not been able to do so. The research will evaluate the city parks' performance based on sustainable landscape design to see how well city parks have the functions contained in the 2019 Green Open Spaces Guidelines for Sustainable Development and Development. Previous research has measured the city parks' performance as their functions related to ecological, health/quality of life, economic, aesthetic, and socio-cultural aspects. This study will add the aspect of mitigation as one of the measurement variables and at the same time as an update of the research. The research will be conducted in 10 City Parks in Jakarta. The evaluation instrument uses a questionnaire that contains an evaluation variable for city parks performance that combines all the functional aspects of city parks with sustainable landscape design and observation principles. Performance evaluation based on city parks sustainable landscape design, there is no city parks function applied in good category and observationally, the condition of city parks' is poorly maintained and gloomy. The recommendation is further research is needed to look more deeply into the root causes factors why the function and sustainability of city parks could not be achieved.

***Keywords:** City Parks, Sustainable Landscape Design, City Park Performance Evaluation*

1. INTRODUCTION

One of the reasons for urban landscape structure changes because of population increase (Brown, 2018) is the decrease in the Green Open Space areas (Rakhshandehroo, Yusof, Arabi, & Jahandarfard, 2016). The impact is environmental degradation in local climate change, Urban Heat Islands, loss of natural habitat and species diversity, air, and noise pollution increase (Grimm, et al., 2008) as well as global warming (Mann, Bradley, & Hughes, 1999). The Presence of green space is significant for minimizing various environmental problems and improving life quality, creating an excellent local climate through air filtration, carbon absorption, cooling through the shade, and reducing energy consumption. Green Open Space is a natural purification for urban areas (Prakoso & Herdiansyah, 2019).

The provision and utilization of green open spaces in urban areas in Indonesia is regulated by the Minister of Public Works Regulation No. 5/PRT/M/2008 which is the elaboration of article 29 of constitution No. 26 of 2007 about Spatial Planning. It is stated that minimum green open space area in a city is 30% of the city area, consisting of minimum 20% public green open space and 10% private green open space. It is the minimum requirement to achieve urban balance. However, in Jakarta, Green Open Space area is decreasing from year to year and in 2018 it was only 3.6% of its total area (Faisal, 2018). The distribution of green open space in Jakarta in Figure 1.



Source: Faisal, 2018

Figure 1. The Map of the Distribution of Green Open Space in DKI Jakarta

Various efforts have been done by the government to increase green open space quantity and quality, especially public green open space. One of them is through Green City Development Program which was published as guidance by the Ministry of Public Works and Public Housing in 2011. The goal of this program is to increase green open space quantity and quality in Jakarta and green open space sustainable. However, the program has not mentioned how to achieve this sustainability. Therefore, until now Green City Development Program has not achieved significant results for green open space quantity and quality, especially for its sustainability. Another government effort is to publish the 2018-2038 DKI Jakarta Green Open Space Master Plan Book in 2018 and the Guidelines to build and develop DKI Jakarta Green Open Spaces in 2019, by the Forestry Institution. From booth books we could see government's efforts to develop green open space into a sustainable urban landscape. From this book, the government

strives to develop sustainable green open spaces, especially urban parks because city park presence is a very useful location for the community to carry out various activities in outdoor spaces.

Based on Jakarta Green Open Spaces Guidelines for Building and Development in 2019, required area for a city park is a park greater than 10 Ha. In fact, in Indonesia, especially in Jakarta, parks greater than 10 Ha are very rare. Land in urban areas become more difficult and expensive, making it difficult to procure. Therefore, Forestry Institution which now has been changed into City Park and Forest Institution carried out a conversion scheme by accommodating Environmental Parks and Regional Parks which have an area from 0.5 up to 10 Ha and easy to be accessed by public to become a City Park. It is done by increasing its facilities existence to be equivalent to city parks facilities. It is in line with case study in Hong Kong which states that a park with good design and facilities is more meaningful to the community than a large park without facilities. Connected Small-scale city parks, easily accessible and strategically located in urban spaces provide a wider scale of service compared to large-scale city parks that are difficult to access. Therefore, facilities provision in small-scale city parks with an area of more than 0.5 ha, strategically located and easily accessible can be equalized to large-scale city park facilities (Lau, 2014).

Initial assessment is needed in order to optimize the equalized conversion scheme of facility existence improvement. This study was conducted to evaluate the performance assessment of urban parks in Jakarta based on sustainable landscape design criteria. This is because many City Parks with 0.5 -10 Ha in Jakarta are abandoned and damaged, such as Cempaka Park, Langsat Park (Sari, 2019), Kalijodo Park (Olyvia, 2017), and Tebet Park (Nafian, 2020), so it seems slummy and gloomy. This research is in line with the government's goal to realize a sustainable City Park, so the results can be used as a basis for the next step, making designs related to the efforts to equalize facilities in City Park facilities needed by the community.

Sustainable landscape design is a concept which is basically a natural system based on the ability to renew itself for design growth/development (Klett & Cummins, 2013), means designing methods that minimize damage and restore destroyed landscapes; create designs to accommodate the community needs by following the principles of natural ecology and beauty. The Sustainable landscape design concept makes design which aware to local nature existence and the natural growth process of used landscape elements, because this step could save landscape maintenance cost (Herman, Sbarcea, & Panagopoulos, 2018; Malek, Mariapan, Shariff, & Aziz, 2014). Besides, it also to fulfil of ecological, social, economic benefits, because a sustainable landscape is a healthy ecological presence, economic savings, and the use of cultural development for the community (Firmansyah, Soeriaatmadja, & Wulanningsih, 2017). It is necessary to understand the principles of sustainable landscape design as a reference to apply sustainable landscape design concept (Yu, Yang, Li, & Xiang, 2011).

The first principle, effectively use of multifunctional landscape space on limited land that that has an impact on improving life quality of the human settlement environment, is a reflection of the high efficiency of land use. The second principle is proportional in the application of engineering technology and the use of landscape materials. The third principle is the use of sustainable energy, by using and protecting water resources carefully through water management systems to meet the water needs of urban landscapes. The fourth principle, management and development of ecosystems by considering social ecology, culture, and natural ecology continuously in the process of appreciating human social assets as a reflection of cultural heritage values and efforts to preserve history (Hui, Lim, Lee, Zakaria, & Keng, 2017). The fifth principle, emphasis on landscape management and maintenance, by considering landscape design elements that are in accordance with local environmental characteristics and have the adaptability of landscape materials to their environment.

Through sustainable landscape design principles application, it is expected to reduce pressure on the urban environment and could provide ecological, health/ life quality (Pakzad & Osmond, 2016), economy (Pakzad & Osmond, 2016; Jennings, Larson, & Yun, 2016; Sugiyama, 2013), aesthetic (Geberemariam, 2016), social culture (Firmansyah, Soeriaatmadja, & Wulanningsih, 2017; Faisal, 2019; Jennings, Larson, & Yun, 2016), and mitigation (Faisal, 2019). In its application, sustainability concept also should be supported by community involvement and other interested parties from the early stages (planning) (Yuslim, 2019), to

avoid conflict and increase community's sense of belonging (Jennings, Larson, & Yun, 2016) to urban parks. Several relevant previous studies to this study are listed in Table 1.

Table 1. Relevant Research

No.	Source	Research Result
1.	IOP Conf. Series: Earth and Environmental Science, 179 (Firmansyah, Soeriaatmadja, & Wulanningsih, 2017)	Evaluation of Green Open Space using indicators and parameters of sustainable urban landscapes and green infrastructure from the results of literature studies, such as ecological indicators, economic indicators, health indicators, and socio-cultural indicators.
2.	Advanced Materials Research, 374-377 (Van Herzele & Wiedemann, 2003)	The existence of a healthy ecology, the use of cultural development for the community, and economic savings is a sustainable landscape is (including open education, aesthetics, feelings of belonging, equality, awareness of natural systems)
3.	Urban Environmental Design (Yu & Li, 2007)	The idea of sustainable development for urban landscape design can reduce the immense pressure of the urban environment, gain ecological, social and economic benefits, through sustainable landscape design principles and methods
4.	Sustainable Urban Green Space Management Practice (Hui, Lim, Lee, Zakaria, & Keng, 2017)	Management action plans from the concept of sustainable availability of urban green space must consider ecological, socio-cultural, economic, and planning factors
5.	Int. J. Environ. Res. Public Health, 13: 196 (Jennings, Larson, & Yun, 2016)	Urban green spaces provide nature-based cultural ecosystem services for public health
6.	Sustainable Competitive Advantage, SCA (Sugiyama, 2013)	Indicators that affect the quality of public green open space services, namely as city identity, preventing air pollution, improving city climate, waste management, groundwater absorption, helping to preserve living things, environmental beauty, limited production, reducing mental stress (stress)
7.	Procedia - Social and Behavioral Sciences (Pakzad & Osmond, 2016)	Green infrastructure performance indicators, are public health and environmental services, as well as community welfare

Previous research has discussed green open space evaluation by using ecological, health, economic, environmental beauty and socio-cultural variables and discussed the benefits of considering sustainable landscape design in green open space for a city. Based on previous studies results, there is a gap, there is no research that considers mitigation aspect in the variables. Therefore, this study novelty is performance of urban parks based on sustainable landscape design evaluation by adding of mitigation function indicator achievement along with previous studies indicators. Thus, the variables that will be measured in city parks performance evaluation are City Parks functions related to ecological aspects, health aspects/life quality, economic aspects, socio-cultural aspects, beauty aspects, and mitigation aspects.

Table 2. Variables and indicators

No.	Variables	Indicators	Source
1.	Ecology aspects	The green pattern provides a comfortable microclimate The green pattern reduces dust particles The park has a good hydrological system The park has a system of waste decomposition and cycles The park has a rainwater and runoff harvesting system Parks are a place for biodiversity	(Firmansyah, Soeriaatmadja, & Wulanningsih, 2017; Hui, Lim, Lee, Zakaria, & Keng, 2017; Geberemariam, 2016; Faisal, Pedoman Pembangunan dan Pengembangan Ruang Terbuka Hijau, 2019; Pakzad & Osmond, 2016)

No.	Variables	Indicators	Source
2.	Health/ quality of life aspects	Improve physical well-being (Facilitate activities for health improvement/exercise and relaxation) Improve social welfare (Facilitate interaction activities and play activities for children) Increase environmental freshness (Green pattern and presence of vegetation) Improve mental well-being (Provides a relaxed/relaxed atmosphere)	(Pakzad & Osmond, 2016; Sugiyama, 2013; Jennings, Larson, & Yun, 2016; Sugiyama, 2013)
3.	Economic aspects	Increase the property value around Increase the attractiveness of visiting Support local economic activities	(Firmansyah, Soeriaatmadja, & Wulanningsih, 2017; Pakzad & Osmond, 2016)
4.	Aestetic aspects	Soft material that is well maintained Hard material is well maintained Well maintained facilities and infrastructure As a landmark for the local area	(Geberemariam, 2016)
5.	Socio cultural aspects	Urban farming Opportunities for recreational activities, tourism and social interaction Community opportunities for activities Pedestrian way and connectivity Visitor friendly Supports education and research Lowering crime and fear of evil Provides a sense of belonging to the local community to the park Local cultural values (uniqueness of local culture)	(Firmansyah, Soeriaatmadja, & Wulanningsih, 2017; Faisal, Pedoman Pembangunan dan Pengembangan Ruang Terbuka Hijau, 2019; Jennings, Larson, & Yun, 2016)
6.	Mitigation aspects	The evacuation area (disaster response room) is 1000 M^2 Evacuation Route Green pattern supporting the evacuation area	(Faisal, 2019)

2. DATA AND METHODS

This research uses mixed research methods. At the beginning of the study, qualitative methods were used to understand the existing phenomena holistically (Maleong, 2000). Case study research is carried out based on occurred events, because this research systematically studies how an event can occur through interactions between variables at a certain time (Creswell, 2016). Then, the research was continued with a quantitative descriptive method based on the positivism philosophy, develop confidence by collecting evidence in objective observations of relevant phenomena. This method is used to examine an event, condition, object, or status for future purposes (Sugiyono, 2017).

2.1. Research Sample

The study was conducted in Jakarta, Indonesia, with 10 city parks sample. The research sample was determined by purposive sampling with the distribution of 2 city parks in each Jakarta administrative city, except for the Thousand Islands. Survey sample criteria are largest city parks area (0.5 – 10 Ha), representing administrative city area; have facilities equivalent to a city park; and has easy accessibility. Ten city parks were used as research samples are Taman Cempaka and Taman Salix located in East Jakarta; Taman Tebet and Taman Langsat located in South Jakarta, Taman Monas and Taman Lapangan Banteng located in Central Jakarta; Kalijodo Park and Bintaro Park located in North Jakarta; and Cattleya Park and Wijayakusumah Park located in West Jakarta. In all research samples, observations were made to get an overview of city parks that would be assessed.

2.2. Data Used

Data used in this study are data from observations and questionnaire that consist of sustainable landscape design performance evaluation. Variables and indicators used in the questionnaire were based on literature studies from previous researchers. After validity testing through a focus group discussion with experts team (representatives of the government, practitioners, and academics), then an assessment step is carried out on sustainable landscape design city parks performance. The assessment is carried out on 6 city park function variables, related to ecological aspects, health and life quality aspects, economic aspects, aesthetic aspects, socio-cultural aspects, and mitigation aspects. Assessment of these variables using 29 indicators. There are 6 indicators for ecological aspect, 4 indicators for health and life quality aspect, 3 indicators for economic aspect, 9 indicators for socio-cultural aspect, 4 indicators for aesthetic aspect, and 3 indicators for mitigation aspect.

Evaluation form will be filled out by respondent. Respondents were determined based on purposive sampling, sampling based on certain criteria or considerations related to objectives, research needs, and population characteristics (Fraenkel & Norman, 2012) with a total of 20 – 30 respondents (Creswell, 2014). In this study, 30 respondents were used, consisting of representatives from the landscape architect profession (experts in consultants field and contractors) and the city government (Public Works and Public Housing Department; Parks Institution). Each profession consists of 10 people.

Assessment on evaluation form uses a Likert scale. This scale is a scale used to measure a social phenomenon perceptions, based on operational definitions set by researchers (Tatang, 2010). The Likert scale can be an interval measurement scale called interval scale class (Carrafio & Rocco, 2007) and an ordinal measurement scale called the ordinal scale class (Jamieson, 2004). This study uses a Likert scale with an interval scale class rating range of 1 up to 3 which is graded from negative lowest score to positive highest score (Janti, 2014). A score of 3 is good (assessment parameter indicator, is present/fulfilled and put as an optimal role). A score of 2 is sufficient (assessment parameter indicator, is present/fulfilled, but does not put as an optimal role). A score of 1 is poor (assessment parameter indicator does not exist or exists, but does not work). The total score of all the questions is called the test score which is the main thing in the Classical Test Theory (CTT) (McDonald, 1999; Baker, 2001). The calculation of the total score for all indicators from each research sample is the mean value of the respondents' scores for all indicators from each research sample.

Interval scale classes for each variable of all indicators from research sample are grouped based on value categorization by determining the interval class of all indicators of each research sample.

Data area	=	Highest score – Lowest score	(1)
Highest score	=	Total indicators x Highest score	(2)
Lowest score	=	Total indicators x Lowest score	(3)
Interval	=	Data area Number of interval classes	(4)

After knowing the interval value, scale range and assessment category can be determined (Budiaji, 2013; Sugiyono, 2017).

2.3. Data Analysis Technique

Data analysis uses means (mean score), and includes categorization according to interval class, by going through two steps. First, calculate the entire statement/indicator score (respondents who answered multiplied by the score). Second, calculate the average, both average assessment scores for each indicator for the entire research sample and the average assessment scores for all indicators for each research sample. After that, the mean score was categorized into the interval class category. The determination of interval class for all indicators of each variable for each research sample (Warsono & Hariyanto, 2013), is in Table 3. The calculation of the interval class for each variable is as follows:

1. Functional variables related to ecological aspects are 6 indicators, the highest interval score limit is 18, the result of multiplying indicators total number (6 indicators) with the highest score 3. The lowest interval score limit is 6, the result of multiplying indicators total number with the lowest score 1. The data area is 12 so the interval is 4 (12/3).
2. Functional variables related to aesthetic aspects as well as functional variables related to health and life quality aspects are 4 indicators, the highest interval score limit is 12, the result of multiplying indicators total number (4 indicators) with the highest score 3. The lowest interval score limit is 4, the result of multiplying indicators total number by the lowest score 1. The data area is 8 so the interval is 2.66 (8/3).
3. Functional variables related to economic aspects, as well as function variables related to mitigation aspects are 3 indicators, the highest interval score limit is 9, the result of multiplying indicators total number (3 indicators) with the highest score 3. The lowest interval score limit is 3, the result of multiplying indicators total number with the lowest score 1. The data area is 6 so the interval is 2 (6/3).
4. Functional variables related to social-cultural aspects with 9 indicators, the highest interval score limit is 27, the result of multiplying indicators total number (3 indicators) with the highest score 3. The lowest interval score limit is 9, the result of multiplying indicators total number with the lowest score 1. The data area is 18 so the interval is 6 (18/3).

Table 3. Interval Class for Assessment Category All Indicators from Each Variable in each Research Sample

No.	Categories	Interval Class for Assessment Categories			
		All Indicators for Functional Variables related to Ecological Aspect	All Indicators for Functional Variables related to Aesthetic Aspects as well as Health and Quality of Life Aspects	All Indicators for Functional Variables related to Economic Aspects and Mitigation Aspect	All Indicators for Functional Variables related to Socio-Cultural Aspects
1.	Good	14,01 – 18	9,34 – 12	7,01 – 9	21,01 – 27
2.	Sufficient	10,01 – 14	6,67 – 9,33	5,01 – 7	15,01 – 21
3.	Poor	6 – 10	4 – 6,66	3 – 5	9 – 15

Source: Analysis, 2021

3. RESULT AND DISCUSSION

Observations results for city parks that were used as research samples were carried out to get a real picture to the field conditions, as well as to provide an overview to the expert team of research samples that had to be assessed for their performance. The results of observations in the field are shown in Table 4.

Table 4. City Parks as Research Samples

No.	Visualization	Park Name, Location and Size	Observation of the Condition of Facilities, Infrastructure, and Visitors
1.		Cempaka Park, East Jakarta 70.873 M^2	➢ Multi-functional green areas such as interaction area, recreation area, playground area. Those are still use by the visitors. ➢ The condition of the park is neglected and gloomy ➢ There are several damaged facilities and infrastructure ➢ Visitors still use the park

No.	Visualization	Park Name, Location and Size	Observation of the Condition of Facilities, Infrastructure, and Visitors
2.		Salix Park East Jakarta 27.409 M²	➢ Multi-functional green areas such as interaction area, recreation area, playground area. Those are still use by the visitors. ➢ The condition of the park is neglected and gloomy ➢ There are several damaged facilities and infrastructure
3.		Tebet Park South Jakarta 69.654 M²	➢ Multifunctional green areas such as interaction area, recreation area,community activity area, playground area ➢ The condition of the park is neglected and gloomy ➢ There are several damaged facilities and infrastructure ➢ The visitors still come and use the park.
4.		Langsat Park South Jakarta 36.000 M²	➢ Multifunctional green areas such as interaction area, recreation area, community activity area, sports area, playground area ➢ The condition of the park is neglected and gloomy ➢ There are several damaged facilities and infrastructure ➢ The visitors still come and use the park.
5.		Monas Park Centre Jakarta 80.000 M²	➢ Multifunctional green and non-green areas such as interaction area, recreation area, community activity areas, sports areas, playground areas. The community always use this park ➢ Abandoned and gloomy garden conditions ➢ There are several damaged facilities and infrastructure ➢ The community still need this park for outdoor activity
6.		Lapangan Banteng Park Centre Jakarta 58.893 M²	➢ Multifunctional areas such as interaction area, recreation area, community activity areas, sports areas, play areas, educational facilities ➢ The condition of the park is neglected and gloomy ➢ There are several damaged facilities, and infrastructure ➢ As a new park, people interested to go there.
7.		Kalijodo Park North Jakarta 36.878 M²	➢ Activity areas for specific communities, interaction areas, garden dining areas with large built-up areas ➢ The condition of the park is neglected and gloomy ➢ There are several damaged facilities and infrastructure ➢ The community still use this park
8.		Bintaro Park North Jakarta 6.297 M²	➢ Multifunctional green areas such as interaction areas community activity area, play area ➢ The condition of the park is neglected and gloomy ➢ There are several damaged facilities and infrastructure ➢ The park did not anticipate the possibility of flooding ➢ The community needs this park for autdoor activity
9.		Cattleya Park West Jakarta 31.945 M²	➢ Multifunctional green areas such as interaction areas, community activity area, play area ➢ The condition of the park is neglected and gloomy ➢ There are several damaged facilities and infrastructure ➢ The park did not anticipate the possibility of flooding ➢ The community often visit the park
10.		Wijayakusumah Park West Jakarta 13.826 M²	➢ Multifunctional green areas such as interaction areas, play area, but the community still visit the park for several activity ➢ The condition of the park is neglected and gloomy ➢ There are several damaged facilities and infrastructure

Source: Observation, 2021

Based on observations results, it can be seen that from 10 city parks that were used as research samples, almost all of them needed to be repaired. The garden also looks neglected. The park that is still in good condition is the Lapangan Banteng Park. This is because the park has just finished its renovation in 2019. However, the park is still actively used by the community, but some facilities and infrastructure are damaged and need to be repaired. Besides, the park also still needs additional facilities as a city park, for example at Cempaka Park, Salix Park, and Wijayakusumah Park. This observation results are also reinforced by the results of distributing questionnaires in order to measure city park performance that is used as an instrument to measure city parks performance. The respondent's evaluation results for city parks performance measuring based on sustainable landscape design are in Table 5.

Table 5. City Park Performance Assessment Evaluation Results form Based on Sustainable Landscape Design

No	Research Sample	City Park performance variables					
		Ecology Aspects	Health/ Quality of life Aspects	Economic Aspects	Aesthetic Aspects	Socio Cultural Aspects	Mitigation Aspects
1.	Cempaka Park	8,2 (246/30)	9,26 (278/30)	4,06 (122/30)	6,5 (195/30)	14.03 (421/30)	4,16 (125/30)
2.	Salix Park	7,03 (211/30)	7,03 (211/30)	4,04 (121/30)	5,07 (152/30)	11,87 (356/30)	4,23 (127/30)
3.	Tebet Park	9,83 (295/30)	7,93 (238/30)	3,97 (119/30)	6,47 (194/30)	14,83 (445/30)	4,23 (127/30)
4.	Langsat Park	10 (300/30)	9,83 (295/30)	4,4 (132/30)	7,83 (235/30)	15,1 (453/30)	4,07 (122/30)
5.	Monas Park	6,03 (181/30)	8,03 (241/30)	4,83 (145/30)	7,73 (232/30)	15,17 (455/30)	5,03 (151/30)
6.	Lapangan Banteng Park	8,27 (248/30)	10,03 (301/30)	6,7 (201/30)	8,5 (255/30)	18 (540/30)	5,17 (155/30)
7.	Kalijodo Park	7,17 (215/30)	6,13 (184/30)	4,07 (122/30)	5,2 (156/30)	14,77 (443/30)	3,17 (95/30)
8.	Bintaro Park	7,1 (213/30)	7,8 (234/30)	3,43 (103/30)	6,67 (200/30)	15 (450/30)	4,03 (121/30)
9.	Cattleya Park	10 (300/30)	9,76 (293/30)	4,47 (134/30)	7,47 (224/30)	15,17 (455/30)	4,1 (123/30)
10.	Wijayakusuma Park	8,3 (249/30)	7,17 (215/30)	3,27 (98/30)	5,93 (178/30)	14,2 (426/30)	4,03 (121/30)

Source: Analysis, 2021

The evaluation results for City Parks Based on Sustainable Landscape Design performance assessment are as in Table 6.

Table 6. Results of the Recapitulation of the Achievement of City Park Functions from each City Park

No	Research Sample	City Park performance variables					
		Ecology Aspects	Health/ Quality of Life Aspects	Economic Aspects	Aesthetic Aspects	Socio Cultural Aspects	Mitigation Aspects
1.	Cempaka Park	Poor	Sufficient	Poor	Poor	Poor	Poor
2.	Salix Park	Poor	Sufficient	Poor	Poor	Poor	Poor
3.	Tebet Park	Poor	Sufficient	Poor	Poor	Poor	Poor
4.	Langsat Park	Poor	Good	Poor	Sufficient	Sufficient	Poor

No	Research Sample	City Park performance variables					
		Ecology Aspects	Health/ Quality of Life Aspects	Economic Aspects	Aesthetic Aspects	Socio Cultural Aspects	Mitigation Aspects
5.	Monas Park	Poor	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient
6.	Lapangan Banteng Park	Poor	Good	Poor	Poor	Poor	Poor
7.	Kalijodo Park	Poor	Poor	Poor	Poor	Poor	Poor
8.	Bintaro Park	Poor	Sufficient	Poor	Sufficient	Poor	Poor
9.	Cattleya Park	Poor	Good	Poor	Sufficient	Sufficient	Poor
10.	Wijayakusuma Park	Poor	Sufficient	Poor	Poor	Poor	Poor

Source: Analysis, 2021

City Park function achievement recapitulation results from each research sample based on sustainable landscape design City Park performance assessment (Table 6) could be seen that:

1. Cempaka Park, there are 83.3% (5 variables) of variables measured number, are in bad category, for the functions related to ecological, economic, socio-cultural, aesthetic, and mitigation aspects; and 16.7% (1 variable) are in sufficient category, for the functions related to health/life quality aspects.
2. Salix Park, there are 83.3% (5 variables) of variables measured number, are in bad category, for the functions related to ecological, economic, socio-cultural, aesthetic, and mitigation aspects; and 16.7% (1 variable) are in sufficient category, for the functions related to health/life quality aspects.
3. Taman Tebet, there are 83.3% (5 variables) of variables measured number, are in bad category, for functions related to ecological, economic, socio-cultural, aesthetic, and mitigation aspects; and 16.7% (1 variable) are in sufficient category, namely functions related to health/life quality aspects.
4. Langsat Park, there are 50% of the variables (3 variables) of variables measured number, are in bad category d, for the functions related to ecological, economic, and mitigation aspects; 33.3% (2 variables) are in sufficient category, for the functions related to aesthetic and socio-cultural aspects; and 16.7% (1 variable) are in good category, for the functions related to health/life quality aspects.
5. Monas Park, there are 16.7% (1 variable) of variables measured number, are in bad category, for the functions related to ecological aspects; and 83.3% (5 variables) are in sufficient category, for the functions related to economic, health/life quality, aesthetics, socio-culture, and mitigation aspects.
6. Lapangan Banteng Park, there are 16.7% (1 variable) of variables measured number, are in bad category, for the functions related to ecological aspects; 66.7% (4 variables) are in sufficient category, for the functions related to aesthetic, socio-cultural, economic, and mitigation aspects; and 16.6% (1 variable) are in good category, for the functions related to health/life quality aspects.
7. Kalijodo Park, there is no variable from variables measured number, are in good or sufficient category. The six variables are in bad category, means that this park has not been able to fulfil all city park functions.
8. Bintaro Park, there are 66.7% (4 variables) of variables measured number, are in bad category, for the functions related to ecological, economic, socio-cultural, and mitigation aspects; and 33.3% (2 variables) are in adequate category, for the functions related to health/life quality of life and aesthetic aspects.
9. Cattleya Park, there are 50% (3 variables) of variables measured number are in bad category, for the functions related to ecological, economic, and mitigation aspects; 33.3% (2 variables) are in sufficient category, for the functions related to aesthetic and socio-cultural aspects; and 16.7% (1 variable) are in sufficient category, for the functions related to health/life quality aspects.
10. Wijayakusuma Park, there are 83.3% (5 variables) of variables measured number are in bad category, for they functions related to ecological, economic, socio-cultural, aesthetic, and mitigation aspects; and 16.7% (1 variable) are in sufficient category, for the functions related to health/life quality aspects.

Based on the evaluation results, it can be seen that many sustainable city parks landscape design performance variables have not been categorized as good in this study, illustrating that city parks not

functioning in an optimal and sustainable manner. There are several city parks that can achieve a good category for one of the measured variables (improvement of health/life quality), named Lapangan Banteng Park, Langsat Park, and Cattleya Park. It is because city parks still have relatively large green areas and are good enough so people can continue to use them to carry out certain activities, such as exercising, interacting, and engaging in certain community activities. The park that has highest presentation assessment is Lapangan Banteng Park. It is because Lapangan Banteng Park has just been renovated in 2019. The variable assessment for Lapangan Banteng Park is mostly in the adequate (66.7%) and good (16.7%) categories, which are the highest assessment results from all city parks research sample, because the park is in a new condition after recently renovated. The renovation is done while maintaining the expected function but still not optimal.

At Cattleya Park and Langsat Park, although there are some facilities and infrastructure need improvement, the park still has green areas and still could be used for activities and interactions. This also shows that Jakarta people are really need a city park as a place for them to interact in outdoor spaces, so that even though park condition is a a little bit neglected and gloomy, the park is still used for activities. Therefore, renovation efforts are needed to make the function back. Related to renovation efforts, this study results could be used as a first step for further research to find the root cause in applying of sustainable landscape design in City Parks' concept.

All research samples achievement in carrying out their functions of the city park recapitulation performance evaluation results based on sustainable landscape design is shown in Table 7. Based on the recapitulation results, it can be seen that:

1. Functions achievement related to ecological aspects, there are 100% of research samples have a poor category.
2. Functions achievement related to health and life quality aspects, there are 10% of the study samples have a poor category, there is Taman Kalijodo; 60% of research samples were in moderate category, there are Cempaka Park, Salix Park, Tebet Park, Bintaro Park, Monas Park, and Wijayakusumah Park; 30% of the research samples were in good catergory, there are Lapangan Banteng Park, Langsat Park, and Cattleya Park.
3. Functions achievement related to economic aspects, there are 100% of research samples have a poor category.
4. Functions achievement related to aesthetic aspects, there are 50% of the research samples have a poor category, there are Cempaka Park, Salix Park, Tebet Park, Kalijodo Park, and Wijayakusumah Park, and 50% are in sufficient category, there are Langsat Park, Monas Park, Lapangan Banteng Park, Bintaro Park, and Cattleya Park.
5. Functions achievement related to socio-cultural aspects, 60% of research samples were in poor category, there are Cempaka Park, Salix Park, Tebet Park, Kalijodo Park, Bintaro Park, and Wijayakusumah Park, and 40% were in sufficient category, there are Langsat Park, Monas Park, Lapangan Banteng Park, and Cattleya Park.
6. Functions achievement related to mitigation aspect, there are 80% of assessment samples are in poor category, there are Cempaka Park, Salix Park, Tebet Park, Langsat Park, Kalijodo Park, Bintaro Park, Cattleya Park, and Wijayakusumah Park, and 20% are in sufficient category, there are National Monument Park and Lapangan Banteng Park.

Table 7. City Park Function Achievement Based on Sustainable Landscape Design City Park Performance Variables Recapitulation Results

No	Research Sample	City Park performance variables		
		Good	Sufficient	Poor
1.	Ecology aspects	-	-	100% (All researches sample)

No	Research Sample	City Park performance variables		
		Good	Sufficient	Poor
2.	Health/Quality of life aspects	30% (Lapangan Banteng Park, Langsat Park, and Cattleya Park)	60% (Cempaka Park, Salix Park, Tebet Park, Bintaro Park, Monas Park, dan Wijayakusumah Park)	10% (Kalijodo Park)
3.	Economic aspects	-	-	100% (All research samples)
4.	Aesthetic aspects	-	50% (Langsat Park, Monas Park, Lapangan Banteng Park, Bintaro Park, and Cattleya Park)	50% (Cempaka Park, Salix Park, Tebet Park, Kalijodo Park, and Wijayakusumah Park)
5.	Socio cultural aspects	-	40% (Langsat Park, Monas Park, Lapangan Banteng Park, and Cattleya Park)	60% (Cempaka Park, Salix Park, Tebet Park, Kalijodo Park, Bintaro Park, and Wijayakusumah Park)
6.	Mitigation aspects	-	20% (Monas Park and Lapangan Banteng Park)	80% (Cempaka Park, Salix Park, Tebet Park, Langsat Park, Kalijodo Park, Bintaro Park, Cattleya Park, dan Wijayakusumah Park)

Source: Analysis, 2021

Sustainable landscape design city parks performance assessment evaluation shows that from the entire city parks used as research samples, almost all city parks have not good ratings for function variables related to ecological, health/life quality, economic, aesthetic, social culture, and mitigation aspects. This means that almost all research samples (city parks) do not the expected function optimally. Because the principles of sustainable landscape design concepts have not been fulfilled in City Parks, maintenance costs cannot be saved (Herman, Sbarcea, & Panagopoulos, 2018; Malek, Mariapan, Shariff, & Aziz, 2014). City Park became unmaintained. In the end, the ecological, social and economic benefits in the form of a healthy ecology, economic savings, and the use of cultural development that should be felt by the community as a reflection of sustainability (Firmansyah, Soeriaatmadja, & Wulanningsih, 2017) were not achieved. Depth research to find the root cause is really needed. That's why, research results can be used as initial data and prioritization for further research steps.

4. CONCLUSION

There is no functional variables related to ecological, health/life quality, economic, aesthetic, socio-cultural, and mitigation aspects that are categorized as good from research results based on sustainable landscape design City Park performance assessment in Jakarta. Observations show that almost all city parks are in a dismal condition and poorly maintained. City Park performance evaluation questionnaire results based on sustainable landscape design show that City Park facilities and infrastructure have not yet seriously applied the sustainable landscape design principles. Therefore, there is a need for further research that focuses on finding the root causes of the current condition of City Parks that can refer to sustainable landscape design principle.

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