User Perception of the Existence of Arena Youth Park as a Green Open Space in Jambi City

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Abstract. Green Open Space (GOS) is one of the conditions for the formation of a good and healthy city that is beneficial for humans and the environment around the city. In Jambi City Arena Youth Park is one of the GOS and a place for people to do activities such as sports, picnics with family, playgrounds and other activities in Jambi City. This paper aims to determine the user's perception of Arena Youth Park as a green open space. The method used in this research is quantitative qualitative. The results showed that the typology of green open space in Arena Youth Park was optimal, most of them had met the standards in the Minister of Public Works Regulation No.05/PRT/M/2008. Users of Arena Youth Park tend to engage in recreational activities with a proportion of 49.1%. The variable that has a significant effect on the existence of Arena Youth Park as GOS is Arena Youth Park which affects air quality in cities. As many as 73% of Arena Youth Park users agree that Arena Youth Park is a green open space in Jambi City. With three aspects, namely ecological (72%), socio-cultural (73%) and economic (75%).

1. Introduction

Cities are relatively dense places where a number of residents live. Cities are not only centers of settlements but also centers of transportation, education, trade and offices [1]. The density of activities in urban areas causes changes in the physical environment and decreases the quality of the environment [2]. Greening is an effort to overcome urban environmental problems by increasing green open space. Green open space is needed in urban areas [3]. This is done to support the quality of life in an urban environment to feel beautiful, comfortable, ecosystem quality, health and welfare to be better, economical and sustainable [4].

Green Open Space (GOS) is one of the conditions for the formation of a good and healthy city that is beneficial for humans and the urban environment [5]. GOS is not only a city necessity but also functions to support the city's aesthetics. The benefits of the existence of GOS are as the lungs of the city to protect city people from noise pollution and air pollution. Green open space has two functions, namely intrinsic or ecological functions, and extrinsic functions, including social, cultural and aesthetic functions [6]. City parks are a favorite place for people to socialize and carry out many activities, because city parks have been facilitated by various sports facilities, recreational facilities and educational facilities in one place that is free, making it affordable for all levels of society ranging from children, adolescents, parents. and the elderly can take advantage of the existence of city parks as green open spaces [7].
Provision of GOS Space is regulated in the Minister of Public Works Regulation No. 05/ PRT/M/2008 concerning Guidelines for the Provision and Utilization of green open space in urban areas [8] and the Minister of Home Affairs Decree Number 1 of 2007 concerning Planning for Urban green open space which is intended to ensure the availability of sufficient space for [9]:

a. Conservation area for hydrological preservation;
b. Runaway water control areas by providing retention ponds;
c. Biodiversity development area;
d. Areas of microclimate creation and pollutant reduction in urban areas;
e. Community recreation and sports areas;
f. Public burial place;
g. Limiting urban development in unexpected directions;
h. Safeguarding natural, artificial and historical resources;
i. Provision of green open space that is private in nature, through restrictions on density and criteria for is utilization;
j. Disaster mitigation / evacuation areas;
k. Signage placement space is in accordance with laws and regulations and does not interfere with the main function of the GOS.

In PU Regulation No. 05 of 2008, the characteristics of the green open space typology have diversity that need to be adjusted to the typology of the area in its function and application. The following is a table of directions for the characteristics of green open space in urban areas for area typology based on population [8].

| Typology of Urban Areas | The main function | Application of GOS Needs |
|-------------------------|-------------------|--------------------------|
| Population rarely to medium | Basic area planning | Based on a specific function |
|                          | Social            | Based on the population  |
| Densely populated       | Ecological        | Based on a specific function |
|                          | Social            | Based on the population  |
|                          | Hydrological      |                          |

Jambi City, with an area of 205.38 km², consists of 11 sub-districts and 62 sub-districts that continue to experience changes in land use [10]. Land that used to be open space and green areas has turned into built-up areas, such as housing, offices, education, health and business premises. The need for green open space in Jambi City is stipulated in the regulation Jambi City Area No. 09 of 2013 concerning the regional spatial plan (RTRW) of Jambi City 2013-2033, where the need for green open space is planned for an area of 5,381.79 hectares or 30% consists of private green open space covering ± 1,764, 29 Ha or 10% and space public green open area of ± 3,617.50 hectares or 20% and parks of ± 875.90 hectares or 4.99% from the public sphere [11]. So far, the provision of green open space is still not sufficient. Only 779.02 Ha or 4.45% of public green open space and 632.46 Ha or 4.47% private green open space are available [12].

Jambi City has several city parks that take advantage of pedestrian paths, playgrounds and vacant land designated for city park development. The city parks include Singles Park, Arena Youth Park, Tugu Press Park, Perumnas Park, and others. Besides being filled with plants, this city park is also equipped with several recreational and sports facilities. Arena Youth Park is one of the city parks in the new city area which is the center of government of Jambi City Government, precisely located on Jl. H. Agus Salim. Arena Youth Park is one of the places where people do many activities, such as sports, picnics with family, playgrounds and other activities.

The existence of city parks has advantages and disadvantages in the perception of every community. In order for a city park to function optimally as a green open space, it is necessary to pay attention to whether it meets the criteria for providing an ideal green open space in ecological, socio-cultural and economic aspects for its users. To find out the extent to which the community assesses the existence of
the Arena Youth Park as a green open space that benefits the people of Jambi City, a study of the user perception of the existence of arena youth park is a green open space in Jambi City.

2. Methodology
This research is survey research. The methods used in this research are qualitative and quantitative with primary and secondary data collection [13]. Primary data collection comes from observations and questionnaires, while secondary data collection is obtained through a survey of literature related to policy and theory [14]. This research was conducted in four stages, namely the first stage (determining the time and location of the study), second stage of observation, the third stage of data collection, and the fourth stage of data analysis. The population in this study were the people of Jambi city who became visitors to the Arena Youth Park. Minimum number of respondents is 50 people, with sampling using the random sampling method. Assessment of the existence of an Arena Youth Park as a green open space in Jambi City based on user perceptions is assessed through ecological, socio-cultural and economic variables. In PU Regulation No. 05/PRT/M/2008, the typology of green open space needs to be adapted to the area in terms of its function and application. The following are the guidelines and the use of GOS observed by researchers in arena youth park based on PU regulations.

Table 2. Typology of green open space

| Green Open Space (GOS) | Physics        | Function       | Structure       | Ownership |
|-----------------------|----------------|----------------|-----------------|-----------|
|                       | Natural GOS    | Ecological     | Ecological      | Public    |
|                       | Non-Natural GOS| Socio-cultural | Patterns        | Privat    |
|                       |                | Aesthetics     | Planological    |           |
|                       |                | Economy        | Pattern         |           |

The instrument used in this study was a google form-based questionnaire by filling out a questionnaire that was distributed via social media broadcast messages. Questionnaire links were distributed indefinitely, but only 105 respondents answered. The results of data processing in the form of a percentage of the answers, then analyzed and discussed according to the research topic under study. Data collection techniques are observation and questionnaires. Observations were made through direct observation in the Arena Youth Park. What was observed was the typology of green open space and visitor activity in the arena youth park. The questionnaire is a data collection technique which is done by giving questions or written statements to respondents to be answered [15]. The measurement uses a modified Likert scale to provide a score for user perceptions about the Arena Youth Park as a green open space [16-21] making it easier to analyze the data obtained from respondents. This research questionnaire contains a series of questions regarding matters related to user perceptions of the existence of an Arena Youth Park as a green open space in the city of Jambi.

Steps taken to measure the perceptions of adolescent users of Arena Youth Park as a green open space. First, calculate the respondent's score and determine the questionnaire score with agreed terms. Second, the calculation of the respondent's score and the percentage level of the existence of city parks as GOS is done by adding up the scores obtained from the respondents. Third, calculate the percentage level of comfort by dividing the total score of the respondents by the maximum total score multiplied by 100%. The instrument in this study was an assessment of the existence of Arena Youth Park as a green open space whose characteristics were based on ministerial regulations that have been established for green open spaces, which were later developed by researchers.
### Table 3. Criteria, score and range for perception green open space

| Criteria                  | Score | Range          |
|---------------------------|-------|----------------|
| Very Agree (VA)           | 5     | 80% ≤ X ≤ 100% |
| Agree (A)                 | 4     | 60% ≤ X ≤ 79.99% |
| Neutral (N)               | 3     | 40% ≤ X ≤ 59.99% |
| Disagree                  | 2     | 20% ≤ X ≤ 39.99% |
| Strongly Disagree (STS)   | 1     | 0% ≤ X ≤ 19.99% |

### 3. Results and Discussion

Green Open Space (GOS) of Arena Youth Park that has been identified and then grouped according to the type of space, here is a presentation of the character of arena youth park based on observation and survey.

#### 3.1 Typology of Green Open Space Arena Youth Park

In PU Regulation No. 05/PRT/M/2008, the typology of green open space has four components, namely physical, function, structure and ownership. Each component has its limit. The following are the results of observations of green open spaces in Arena Youth Park. The physical component has two characteristics. First natural, where the green open space in the process of providing occurs naturally. Second, non-natural, namely green open space where the supply process occurs artificially or intentionally. Non-natural in the youth arena in the form of parks, green paths and places to exercise.

![Physical natural](image1)

![Physical non-natural](image2)

**Figure 1.** a. Physical natural, b. Physical non-natural

The function component has three characteristics. The first is ecological, as the main function that acts as the lungs of the city, a climate regulator to absorb pollutants and rainwater. Second, socio-culture, green open space becomes an additional function (extrinsic), in the Arena Youth Park has ecological functions such as a forum for social activities, recreation, communication, expression, and education. The third is economy, which acts as a source of plantation business or other products for sale.
The spatial structure component has 2 characteristics. Ecological pattern and planological pattern where the Arena Youth Park pattern follow the urban hierarchy and structure (Figure 3). The ownership component is public green open space in the form of joint ownership, such as parks, green lines and etc. Private green open space where the green open space is private or self-help, such as yards, houses in garden areas, roads and others.

3.2 The Existence of Green Open Space

Based on the results of a questionnaire about the existence of a Green Open Space at Arena Youth Park filled out by 105 respondents, the following data were obtained:

a) 65.5% of users based on gender are women and 34.5% are men
b) 86.4% of users of the Arena Youth Park are aged 12-25 years old and other visitors are 26-60 years old
c) 69.1% of the Arena Youth Park users do not live in the area around the park
d) Users based on the intensity of the visit 40% visited the Arena Youth Park three or more times
e) visitors based on the mode of transportation 66.4% motorcycle, 17.3% cars, 9.1% walk and 7.2% use bicycles
f) based on a survey 49.1% of users engage in recreational activities, 16.4% use the Arena Youth Park as a means of playing and 19.1% exercise and others do learn, culinary and other activities
3.3 Analysis of User Perceptions of the Existence of Arena Youth park as a Green Open Space in Jambi City

Based on questionnaire distributed to respondents, to find the percentage of the level of the Arena Youth Park as a green open space using the following formula:

\[
\text{Percentage level green open space of Arena Youth Park} = \frac{\text{Total score of respondents}}{\text{Overall maximum score}} \times 100\%
\]

The total score has been obtained from the calculation process, namely 6132, while the maximum score for all variables is obtained by:

- Maximum score = high score \times \text{number of questions} \times \text{number of respondents} = 5 \times 16 \times 105 = 8400

Percentage of Arena Youth Park as green open space = \frac{6132}{8400} \times 100\% = 73\%
Table 4. Arena Youth Park as green open space

| Range     | Criteria               |
|-----------|------------------------|
| 80% ≤ X ≤ 100% | Very Agree / Very Good |
| 60% ≤ X ≤ 79.99% | Agree / Good (73%)    |
| 40% ≤ X ≤ 59.99% | Neutral / Enough      |
| 20% ≤ X ≤ 39.99% | Disagree / Not Good   |
| 0% ≤ X ≤ 19.99% | Strongly Disagree / Very Not Good |

The rank interval of the quality criteria score for green open space Arena Youth Park can be seen in Table 3. Overall, the results of the analysis of the respondent’s questionnaire show that the respondents "Agree" Arena Youth Park as a green open space in Jambi City.

3.4 Analysis Green Open Space

3.4.1 Ecological aspects

In the ecological aspect, there are 6 indicators namely: plants that cause coolness, are protected from various weather, adequate facilities, absorption of rainwater, parks affect air quality and parks are free from noise. From the results of the questionnaire, it can be seen that a significant ecological function is that Arena Youth Park affects air quality in Jambi City, with other indicators, Arena Youth Park which creates coolness, is protected from various weather, absorbs rainwater, and is noise-free. The following are the results of the assessment of user perceptions on variables of ecological aspects:

Total respondent score = 2261
Maximum score = 3150

Percentage of green open space in ecological aspects = \( \frac{2261}{3150} \times 100\% = 72\% \)

Table 5. Arena Youth Park criteria of ecological aspects

| Range     | Criteria               |
|-----------|------------------------|
| 80% ≤ X ≤ 100% | Very Agree / Very Good |
| 60% ≤ X ≤ 79.99% | Agree / Good (73%)    |
| 40% ≤ X ≤ 59.99% | Neutral / Enough      |
| 20% ≤ X ≤ 39.99% | Disagree / Not Good   |
| 0% ≤ X ≤ 19.99% | Strongly Disagree / Very Not Good |

3.4.2 Socio-Cultural aspects

Arena Youth Park has socio-cultural benefits and functions for the community, namely as a place for recreation, a place to play, sports, a place for health/therapy, a place to conduct educational research, a place for people to chat to meet friends, as a place for cultural introduction performance or education and to carry out various other activities. The results of the assessment of user perceptions on the socio-cultural aspect variables are as follows:

Total respondent score = 3084
Maximum score = 4200

Percentage of green open space in the socio-cultural aspect = \( \frac{3084}{4200} \times 100\% = 73\% \)

Table 6. Arena Youth Park Criteria of Socio-Cultural Aspects

| Range     | Criteria               |
|-----------|------------------------|
| 80% ≤ X ≤ 100% | Very Agree / Very Good |
| 60% ≤ X ≤ 79.99% | Agree / Good (73%)    |
| 40% ≤ X ≤ 59.99% | Neutral / Enough      |
| 20% ≤ X ≤ 39.99% | Disagree / Not Good   |
| 0% ≤ X ≤ 19.99% | Strongly Disagree / Very Not Good |
3.4.3 Economic Aspects

Arena Youth Park has economic value for the surrounding community and has the potential as a source of crop production that can be sold again.

Total respondent score = 787

Maximum score = 1050

The percentage of green open space in the economic aspect = \[ \frac{787}{1050} \times 100\% = 75\% \]

| Range               | Criteria                          |
|---------------------|-----------------------------------|
| 80%≤ X ≤ 100%       | Very Agree / Very Good            |
| 60%≤ X ≤ 79.99%     | Agree / Good (73%)                |
| 40%≤ X ≤ 59.99%     | Neutral / Enough                  |
| 20%≤ X ≤ 39.99%     | Disagree / Not Good               |
| 0%≤ X ≤ 19.99%      | Strongly Disagree / Very Not Good |

Table 7. Arena Youth Park Criteria of Economic Aspects

From the 105 respondents, it was found that the dominant teenager users of the arena park were 12-25 years old. With users based on gender dominated by women, namely 65.8% and men 34.2%. 69.1% of Arena Youth Park users do not live around the park. As many as 40% of Arena Youth Park users visit the park more than three times. The visitors who come to the youth arena park using motorbikes are dominated by 66.4%, 17.3% cars, 9.1% on foot and 7.2% using bicycles. Based on a survey of users of the park, where teenagers do a lot of activities, especially recreational activities, 49.1%, followed by 19.1% of users doing sports, and the rest doing recreational, culinary and other activities.

The existence of the Arena Youth Park as a green open space in the city of Jambi, based on the results of the questionnaire and analysis found that park arena users agreed that Arena Youth Park was green open space in Jambi City with a percentage gain of 73%. From the three aspects of green open space studied, the first is that the ecological aspect of Arena Youth Park is in the good category with 72% results, this reinforces that Arena Youth Park have an influence on air quality in Jambi city. Second, the socio-cultural aspect is in the good category with a result of 73%, this result is obtained by the available facilities at the Arena Youth Park that can be used by park users. Third, the economic aspect with a yield of 75%, this result can be seen from the various economic activities carried out by the community around the Arena Youth Park. From these three aspects, the existence of the Arena Youth Park can be categorized as an influential green open space in the city of Jambi starting from the ecological, socio-cultural and economic aspects. The results obtained from this research can be used as input and reference for the Jambi city government in managing city parks so that they can become better green open spaces.

4. Conclusions

Based on the results of data analysis carried out on the study of user perceptions of the existence of Arena Youth Park as green open spaces in Jambi city, 73% of arena youth park users have the perception that they agree that arena youth park is a green open space in Jambi City. With three aspects, namely ecological (72%), socio-cultural (73%) & economic (75%). This is supported by several factors, namely: coolness, protection from various weather, absorption of rainwater, air quality, free from noise, number of facilities, places to carry out various activities, sources of crop production, and economic value for the community. An indicator that has a significant effect on the existence of the Arena Youth Park as green open space is arena youth park which affects air quality in cities. The typology of the Arena Youth Park for space utilization has been optimal, most of which have met the standards in the Minister of Public Works Regulation No. 05/PRT/M/2008 concerning guidelines for the provision and utilization of green open space in urban areas. Recommendations in this study are that the ecological and economic aspects can be improved to maximize green open space in the city of Jambi. The need for cooperation between the community and the government in order to preserve city parks into green open spaces, so that the quantity of green open space (area) indirectly supports the welfare of the community.
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