

Analysis of The Utilization of Green Open Spaces by The Community of Samarinda City

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ABSTRACT

Green Open Spaces (GOS) in Samarinda are developed to serve ecological functions, provide recreation, include jogging tracks, serve as gathering areas, and act as river buffer zones. Several frequently visited GOS in Samarinda include Teras Samarinda, Samarendah Park, Smart Park/Edupark, and Bebaya Park. This study aims to analyze the use of GOS in Samarinda City, focusing on user characteristics, activity patterns, and factors influencing utilization levels. The research method combines a quantitative survey using questionnaires and a qualitative phenomenological approach to explore users' experiences. The sample consisted of 111 participants who utilize GOS for recreation, sports, social interaction, and other activities. The results show that the majority of activities carried out are relaxing (73.0%), walking (63.1%), and taking photos or creating content (49.5%), mostly with friends or family. The most frequently visited GOS is Samarendah Park, and the main factors affecting comfort and engagement are scenic beauty, cleanliness, and safety. Therefore, the Samarinda city government, in developing the GOS, needs to pay close attention to the community's needs.

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1. INTRODUCTION

Green Open Space (RTH) is a key element in urban spatial planning because it serves ecological and social functions that complement each other. Ecologically, RTH helps improve air quality, reduce pollution levels, maintain microclimate balance, and strengthen urban environmental resilience. Socially, RTH functions as a public space that supports interaction among residents, recreation, cultural activities, and improvements in community quality of life. The combination of these ecological and social functions makes RTH a strategic component in sustainable urban development.

However, various cities in Indonesia face challenges, including limited land availability, land conversion to commercial areas, and weak supervision. The intensity of

RTH utilization is influenced by accessibility, facilities, security, and perceptions of comfort. Aesthetic factors, such as attractiveness and cleanliness, have been shown to have a greater influence on visitation frequency than the physical size of RTH [1].

Samarinda City, the capital of East Kalimantan Province and home to 888,184 people in 2022, faces similar challenges in providing and managing green open spaces. Although various types of RTH are available, ranging from city parks and urban forests to green corridors, their utilization is not evenly distributed. This condition emphasizes that spatial accessibility is a key determinant of RTH utilization [2].

Several RTHs in Samarinda's city center, such as Samarendah Park, Teras Samarinda, and Taman Cerdas, consistently attract the highest visitation levels. Ease of access, comprehensive facilities, and strategic locations make these spaces the community's main choice for exercise, relaxation, and family and friend gatherings. In contrast, RTHs in peripheral areas, although they tend to have larger land areas, are less optimally utilized due to limited facilities and relatively greater distances [2].

Survey findings indicate that RTHs in Samarinda's city center tend to have higher visitation levels than those in peripheral areas. This condition is reinforced by interview results with the Samarinda City Public Works and Spatial Planning Office (PUPR), which indicate that, to date, the Samarinda City Government has not specifically designated priority locations for the development or revitalization of RTH. RTH development is carried out in a dispersed, opportunistic manner, adapting to available land and incoming data to be further analyzed. This approach prevents RTHs from being concentrated in a single area, making accessibility and strategic location important factors influencing the community's level of RTH utilization.

In terms of visitor characteristics, RTH users in Samarinda are dominated by the 21–30 year age group, which represents the productive age group with high mobility. Previous studies indicate that most visitors are women and unmarried individuals, who tend to be more active in using RTHs for recreation, social interaction, and leisure [3]. This illustrates that user demographics also shape the pattern of RTH utilization in urban areas.

Although many studies on RTH have been conducted, most still focus on physical aspects such as land area, facility availability, and the number of parks. Therefore, this study is relevant for filling this gap through a comprehensive analysis of RTH utilization in Samarinda City. The research focuses on analyzing user characteristics, activity patterns, and factors that influence comfort and community satisfaction in utilizing RTH. In addition, this study is expected to provide strategic recommendations for managers and local governments to improve the quality, functionality, and utilization of green open spaces in an optimal, sustainable manner [4].

2. METHOD

This study uses a mixed-methods approach that combines a quantitative survey component and a qualitative phenomenological interview component to explore the utilization of Green Open Space (RTH) in Samarinda City. The research variables focus on types of activities (recreation, sports, social interaction), visit intensity (frequency and duration), user demographics, and perceptions of the quality and function of RTH [5].

The sampling technique used was accidental sampling, involving 111 participants present at RTH locations. The instruments consisted of closed- and open-ended questionnaires covering visit frequency, utilization purposes, facilities used, and visitors' perceptions of comfort and the quality of RTH [6].

In-depth interviews were conducted with key informants from the Samarinda City Public Works and Spatial Planning Office (PUPR) and selected RTH visitors to explore experiences, policies, and the meaning of RTH utilization in greater depth. Informants were selected purposively based on their roles in RTH management, visit intensity, and the diversity of activities carried out in RTH.

Data collection was conducted at several major RTH locations in Samarinda City with high visitation from September to December 2025. The study employed a mixed-method approach, using closed and open-ended questionnaires for the quantitative survey, which covered visit frequency, utilization purposes, facilities used, and visitors' perceptions of comfort and RTH quality. For the qualitative component, in-depth interviews were conducted with key informants from the Samarinda City Public Works and Spatial Planning Office (PUPR) and selected RTH visitors to explore experiences, policies, and the meaning of RTH utilization. Quantitative data were analyzed using descriptive statistics (frequency, percentage, and tables), while qualitative data were analyzed thematically to identify patterns of experience and factors influencing visitor comfort. Both data sets were then integrated to provide a comprehensive understanding of the community's RTH utilization.

3. RESULTS AND DISCUSSION

3.1 Demographic Characteristics of RTH Visitors

Based on data collected from 111 participants who used Green Open Spaces (RTH) in Samarinda City, the following presents an overview of respondents' demographic characteristics, providing insight into the profile of RTH visitors in the city. Table 1 shows that the majority of respondents were female (64.9%), and most were in the 21–30 age range (45.9%). Most respondents also held a bachelor's degree as their highest level of education (55.0%) and had a monthly income of IDR 3,000,001–IDR 5,000,000 (34.2%). The majority of respondents were unmarried (55.9%). These data indicate that RTH visitors in Samarinda tend to be younger and have relatively high levels of education and income.

The results of the study indicate that the utilization of Green Open Space (RTH) in Samarinda City is influenced by visitors' demographic characteristics, particularly the indicators with the highest percentages in the research table. The data show that visitors are predominantly women (64.9%), indicating that this group is more likely to use open spaces for recreation, relaxation, and social interaction. Hendarmoko et al. explain that women tend to be more active in utilizing RTH as safe spaces for social and recreational activities [3]. In addition, the 21–30 age group is the largest (45.9%), underscoring the need for public spaces that support active lifestyles and social mobility. Shan et al. state that RTH is most frequently used by productive age groups seeking spaces for interaction, recreation, and leisure activities in open environments [7]. Thus, these dominant visitor characteristics indicate that RTH functions not only as an ecological space but also as an important social space for women and young adults in urban areas.

Table 1. Demographic Data of Participants

Demographic Data	Category	Frequency (n)	Percentage (%)
Gender	Female	72	64.9
	Male	39	35.1
District	Samarinda Ulu	22	19.8
	Sungai Kunjang	19	17.1
	Samarinda Kota	14	12.6
	Sambutan	11	9.9
	Others	45	40.6
Age	≤ 20 years	29	26.1
	21–30 years	51	45.9
	31–40 years	21	18.9
	> 40 years	10	9.0
Education Level	Junior High School / Equivalent	2	1.8
	Senior High School / Equivalent	39	35.1
	Diploma	7	6.3
	Bachelor's Degree (S1)	61	55.0
	Postgraduate	2	1.8
Ethnicity	Javanese	40	36.0
	Banjar	29	26.1
	Bugis	22	19.8
	Kutai	12	10.8
	Others	8	7.2
Monthly Income	< IDR 1,000,000	20	18.0
	IDR 1,000,001–IDR 3,000,000	35	31.5
	IDR 3,000,001–IDR 5,000,000	38	34.2
	> IDR 5,000,000	18	16.2
Marital Status	Married	49	44.1
	Unmarried	62	55.9
Total		111	100.0

The bachelor's degree level is the largest category (55.0%), indicating that RTH visitors in Samarinda are predominantly highly educated. Setyasih et al. explain that educated communities tend to have greater awareness of the importance of green public spaces as recreational and mental health facilities [8]. In addition, the monthly income range of IDR 3,000,001–IDR 5,000,000 is the most common category (34.2%), indicating that RTH is more frequently used by middle-income communities that require free, easily accessible recreational spaces. Lestari et al. state that middle-income groups tend to use RTH more often because it offers recreational facilities at no cost [9]. Meanwhile, the marital status category "unmarried" is dominant (55.9%), indicating that single individuals are more active in visiting RTH for social interaction, spending time with friends, and engaging in leisure activities. This supports the view of Hendarmoko et al. that RTH functions as a primary social space for individuals seeking a comfortable, safe public environment for recreational activities and social interaction [3].

The following images show several parks in Samarinda City that are most frequently visited, serving as visual references for further exploration of the utilization of Green Open Spaces in this area.



Figure 1: Taman Cerdas, one of the most frequently visited Green Open Spaces (RTH) in Samarinda.



Figure 2: Teras Samarinda, one of the parks with a high visitation rate in Samarinda City.



Figure 3: Taman Samarendah, one of the most popular green open spaces in Samarinda.



Figure 4: Taman Bebaya, one of the Green Open Spaces that is also frequently visited by residents of Samarinda.



Figure 5: Taman Fahutan Unmul, one of the Green Open Spaces often used for recreation and environmental education activities.



Figure 6: Taman Perbankan Samarinda, a Green Open Space popular among workers and visitors in the surrounding area.

3.2 Perception of RTH Comfort

The majority of respondents (77.5%) rated the comfort level of Green Open Spaces in Samarinda City as good, reflecting that cleanliness management, maintenance, and security in RTH are considered quite adequate. However, a small number of respondents rated RTH as only moderately comfortable (10.8%) or very good (11.7%), indicating that there is still room for improvement in certain aspects.

Table 2. Categories of RTH Comfort Perception

Category	Score Range	Frequency (n)	Percentage (%)
Very Good	> 50	13	11.7
Good	40–50	86	77.5
Fair	30–39	12	10.8
Poor	20–29	0	0.0
Very Poor	< 20	0	0.0
Total		111	100.0

The highest percentage is "good" (77.5%), indicating that most visitors perceive the condition of Green Open Spaces (RTH) in Samarinda as sufficiently comfortable to visit. The dominance of this assessment indicates that basic elements such as cleanliness, lighting, spatial design, and facility maintenance have met the comfort standards expected by users. Setiowati et al. emphasize that a high level of comfort increases the community's tendency to visit more frequently and for longer durations [10].

The results also show that the frequency and duration of visits are closely related to visitors' satisfaction levels with RTH. Most visitors (61.3%) visit RTH several times a month, with durations of 30 minutes to 2 hours, indicating that comfort directly influences the intensity and duration of public space use. Nevertheless, the need for improvement remains evident in safety and supporting facilities. Jaelani et al. state that safety and facility quality are important factors that strongly influence perceptions of comfort in RTH [11]. Thus, this dominant comfort perception indicator confirms that the quality of RTH in Samarinda is already good, although there is still room for improvement in certain aspects.

3.3 Patterns of RTH Utilization

Table 3 shows the patterns of RTH utilization by the people of Samarinda City. The most frequently performed activity by visitors in RTH is sitting or relaxing (73.0%), indicating that RTH functions as a space to relieve fatigue and enjoy the open atmosphere. Walking ranks second (63.1%), reflecting its use as a means of light recreation and health maintenance. Taking photos or creating content is also quite popular (49.5%), indicating that the aesthetic quality of RTH is a particular attraction for visitors, especially younger groups. Meanwhile, sports activities (18.9%) and playing (17.1%) indicate that some visitors use RTH for more active physical activities, although the proportions are smaller than for leisure activities.

Table 3. Data on the Utilization of Green Open Space (RTH)

Description	Category	Frequency (n)	Percentage (%)
Activities Performed	Sitting/Relaxing	81	73.0
	Walking	70	63.1
	Taking Photos/Creating Content	55	49.5
	Exercising	21	18.9
	Playing	19	17.1
Aspects Liked in RTH	Scenic Beauty	88	79.3
	Cleanliness and Maintenance	52	46.8
	Facility Completeness	31	27.9
	Ease of Access	24	21.6
	Safety	19	17.1
Main Reasons for Visiting RTH	Seeking New Atmosphere/Recreation	86	77.5
	Gathering with Friends/Family	57	51.4
	Strategic and Accessible Location	29	26.1
	Enjoying Scenic Views	28	25.2
Important Characteristics	Cleanliness and Maintenance Conditions	83	74.8
	Aesthetics (Beauty)	71	64.0
	Features/Facilities	58	52.3
	Safety	44	39.6
Aspects of Concern	Safety (Crime/Harassment)	41	36.9
	Poor Cleanliness	33	29.7
	Unsafe Facilities	25	22.5
	Other Visitor Behavior	19	17.1
Aspects Considered Good	Aesthetics (Design and Scenery)	80	72.1
	Ease of Access	28	25.2
	Features/Facilities	25	22.5
	Cleanliness Condition	22	19.8

The activities most frequently chosen by visitors are relaxing (73.0%), followed by walking (63.1%) and taking photos or creating content (49.5%). The dominance of leisure activities indicates that the community primarily uses RTH as a space for relaxation and enjoyment of the atmosphere. Şenik and Uzun state that urban green open spaces are widely used for light activities that support stress recovery and social interaction [12]. These activities are typically carried out with friends or family, reinforcing RTH's role as an inclusive social space. Meanwhile, activities such as sports and playing have lower percentages, but still indicate that RTH provides diverse functions to meet community needs.

3.4 Factors Influencing RTH Utilization

Most visitors stated that the most favored factor in RTH is scenic beauty (79.3%), indicating that aesthetics are very important for visitor comfort. In addition, cleanliness and facility maintenance (46.8%) are also important factors that increase visitor satisfaction with RTH. Perceptions of RTH comfort tend to be positive, with 77.5% rating the condition of RTH as good, 11.7% as very good, and 10.8% as moderate. This shows that most users are satisfied with RTH's facilities and environment, though a small proportion believe improvements are still needed.

The most favored factor is scenic beauty (79.3%), followed by cleanliness and facility maintenance (46.8%). The dominance of these choices indicates that aesthetic elements and cleanliness are the main determinants of comfort in utilizing RTH. Jaelani et al. state that visual quality and the condition of open spaces directly influence visitation interest [11]. Meanwhile, the factors most concerning to visitors are safety (36.9%) and inadequate cleanliness (29.7%), indicating the need for improved supervision and cleanliness management. Firianti found that safety and well-maintained facilities are important factors influencing visitor comfort while in RTH [13].

The RTH most frequently visited by respondents is Taman Samarendah, which is located in the city center. This indicates that strategic location has a strong influence on visitation intensity. A. R. Muhammad et al. state that RTH located in city centers is more easily accessible and therefore more frequently utilized by various community groups [14]. Pratama et al. emphasize that ease of access and comfort have a greater influence on visitation frequency than the size of the RTH itself [15]. Thus, the dominant location indicator in this study shows that accessibility and perceived comfort are the main determinants in the community's selection of RTH.

3.5 Implications for RTH Management

Based on interviews with the Samarinda City Public Works and Spatial Planning Office (PUPR), the planning of Green Open Spaces (RTH) is not carried out unilaterally by PUPR but through cross-sectoral collaboration among regional agencies, particularly with the Environmental Agency (DLH). Cross-sectoral governance and collaborative planning approaches have been shown to improve the implementation of green space policies and stakeholder engagement [17]. PUPR plays a role in spatial planning aspects by referring to regional policy documents, such as the Regional Regulation/Regional Head Regulation Number 7 of 2023. The importance of integrating planning frameworks with environmental assessment in green space governance has been emphasized in contemporary urban sustainability literature [18]. In this document, PUPR identifies areas with the potential to be designated as RTH, while environmental feasibility is determined through the Strategic Environmental Assessment (KLHS) prepared by DLH. In addition, land legality aspects, particularly land certificate status, are also important considerations involving land agencies.

The indicators of activities and reasons for visiting presented in the table show that RTH is used not only for recreation but also for social interaction, family activities, and content creation. Several studies highlight that multifunctional use of urban green spaces strengthens community engagement and social interaction [19]. This diverse utilization

pattern strengthens the social function of RTH as an inclusive public space. Ekawati et al. explain that RTH functions as a space that connects communities with various social, educational, and recreational needs [16]. Referring to dominant indicators such as relaxing and gathering, it is evident that RTH plays an important role in strengthening social relationships within the community. Park users' preferences for interactive spaces have been linked to enhanced urban livability and wellbeing in prior research [20]. Therefore, RTH development needs to consider user needs in order to create green spaces that are responsive and sustainable.

From the dominant indicators in the table, optimal RTH management must consider who the users are, which activities are most preferred, and which factors are most favored and most concerning. The high percentage of women, the 21–30 age group, and the focus on relaxing activities indicate that RTH should be designed to be friendly to young visitors and safe for female visitors. A. R. Muhammad et al. emphasize the importance of facility quality and comfort to increase the utilization of public spaces [14]. Designing public spaces to be safe and inclusive for diverse demographic groups has been shown to increase utilization and satisfaction [21]. By considering these indicators, RTH management will be more effective and aligned with community needs.

In addition to government management, RTH's sustainability is strongly influenced by community involvement. Regarding community participation, the PUPR Office explained that community involvement is more dominant in the utilization of public RTH as users or visitors. Community engagement in planning and management has been associated with greater sustainability and equity outcomes in green space research [22]. In the context of RTH development, local governments encourage community participation by providing private RTH. Communities that own land are expected to allocate part of their area as green space in accordance with the stipulated building coverage ratio percentages, as well as to use environmentally friendly building materials. Collaborative land-use and green infrastructure strategies have been identified as effective ways to expand urban green space [23]. This strategy serves as one solution to overcome the limitation of public land in the provision of RTH.

The indicators most frequently selected in the table, namely beauty, cleanliness, safety, and comfort, show that RTH development must adapt to the main preferences of the community. Providing relaxation spaces, pedestrian paths, and play areas is important because leisure and walking activities dominate visitors' choices. Atika et al. emphasize the need for universal facilities to increase the social value of RTH [1]. Pratama et al. state that physical quality and access are the main determinants of utilization [15]. Research underscores that high-quality amenities and accessibility directly support users' preferences and increase park usage [24]. Therefore, RTH development strategies in Samarinda need to align with dominant indicators to be more targeted.

This study emphasizes the role of Green Open Spaces (RTH) as inclusive social spaces that support interaction across community groups with diverse backgrounds. A. R. Muhammad et al. explain that activities carried out in RTH are not only recreational but also function as means of education and informal economic activities [14]. Therefore, RTH management needs to consider various aspects required by the community, such as

recreation, sports, education, and social and economic interaction. Thus, RTH not only improves the quality of the physical environment but also strengthens social cohesion and enhances the quality of life of urban communities, in line with the objectives of ecologically and socially based RTH management.

In practice, the results of this study provide recommendations for local governments and city managers in Samarinda on designing more responsive RTH management policies. For example, the development of new RTH or the revitalization of existing RTH should consider strategic locations, ease of access, completeness of facilities, and visitor safety and comfort. In addition, community participation in the planning and management of RTH can increase a sense of ownership and user involvement, thereby optimizing RTH utilization. Yusuf emphasizes the importance of community participation in RTH development for long-term sustainability [25].

In terms of supervision and evaluation, the Public Works and Spatial Planning Office (PUPR) has an important role in ensuring that the realization of Green Open Spaces (RTH) remains in accordance with the Regional Spatial Plan (RTRW). This condition indicates that the effectiveness of RTH management is highly dependent on cross-sectoral coordination, particularly between spatial planning and environmental management aspects. Supervision mechanisms are carried out through program synchronization processes and administrative and technical stages, including compliance with Standard Operating Procedures (SOPs) and spatial planning documents. However, PUPR emphasized that the development of thematic designs and RTH innovations, such as thematic parks or eco-parks, falls under the Environmental Agency's authority. Hence, implementing RTH management requires cross-sectoral coordination to operate optimally and sustainably. Evidence suggests that well-coordinated governance mechanisms enhance the long-term performance of urban green spaces [19].

4. CONCLUSION

The study on the utilization of Green Open Spaces (RTH) in Samarinda City highlights the significance of RTH as multifunctional urban spaces that support recreation, social interaction, and informal economic activities. This research implies that urban planning should prioritize the strategic placement, maintenance, and enhancement of RTH facilities, as well as cleanliness, safety, and aesthetic appeal, to maximize their benefits to the community.

The study is limited by its use of accidental sampling and a relatively small sample size, which may affect the generalizability of the findings. Future research is recommended to employ more rigorous sampling methods, expand the scope to include additional RTH sites, and incorporate longitudinal designs to capture changes in usage patterns over time.

This research contributes to public understanding by emphasizing the social, recreational, and educational roles of RTH in urban life, offering valuable insights for policymakers, urban planners, and community stakeholders seeking to create inclusive, well-utilized green spaces.

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