

Analysis of the Education Levels Role and Community Understanding of Vegetation Patterns for Private Green Spaces in Settlement Areas

Dienny R. Rahmani

Urban and Regional Planning Department, Faculty of Engineering, University of Muhammadiyah Banjarmasin
Banjarmasin, Indonesia

Dina Rafidiyah

English Education Department, Faculty of Teacher Training and Education, University of Muhammadiyah
Banjarmasin
Banjarmasin, Indonesia

Keywords:

Community
Understanding,

Minimum
Provisions for
Vegetation,

Private Green
Spaces,

Vegetation Patterns

ABSTRACT

Private Green Spaces have become a necessity for residential areas. However, it requires initiative from the community itself to provide it, while the initiative comes from understanding the community. This study needs to be done in order to analyze the vegetation patterns of private green spaces formed based on the level of education and people's understanding of the green space. The data needed in this study is divided into two, namely the understanding of the community and the vegetation patterns of private green spaces. Understanding the community is obtained from the level of education and community preferences regarding private green spaces. The vegetation pattern is the actual condition in the private green space of the community. The results obtained show that the level of education influences people's understanding and the actual conditions of the private green space of the community. But in general, it turns out that most people have a good understanding of the existence of a private green space. The pattern of vegetation in the private green spaces are in accordance with the requirements for the existence of the private green spaces.

*corresponding author: dienny.redha.rahmani@umbjm.ac.id / dn.redha@gmail.com

INTRODUCTION

The proportion of green open space (RTH) in the city area is at least 30 (thirty) percent of the area of the city (Government of the Republic of Indonesia, 2007). The proportion of green open spaces in urban areas are at least 30% which consists of 20% of public green open spaces and 10% of private green open spaces (Ministry of Public Works, 2008). Green open spaces required based on population size are 40 square meters/pa (Krisdianto, et al., 2010). The ideal canopy cover area from land area based on house type is 87% for simple house type, 53% for middle house and 18% for luxury house (Pratiwi, et al., 2012). in one plot of land (buildings and yards) there must be a minimum of 10% of the land for private green spaces, where at least 50% of the private green space is filled with vegetation (ACT Government, 2011).

Users of urban green space in Banjarbaru suggested that every resident should have at least one private tree, where ever this may be grown, and that these trees must have multiple benefits, such as fruit production, shelter or other ecological, economic and social values (Krisdianto, et

al.,2012). Another dimension of urban sustainability is use of private green space in sustainable livelihood. In general, vegetation composition in private green space reflect human intentions (Balooni, et al., 2011).

The survey results show that the mindset pattern of the community is organized into three major ranks which can be used as criteria for selecting the type of vegetation, namely: to increase comfort, to get benefit and to give aesthetic value (Rahmani & Wahyunah, 2018). In accordance with the objectives that the standard is widely used for urban environmental quality improvement is good, fresh, clean and as a means of environmental protection and create a harmony of the natural environment and built environment is useful for public interest (Krisdianto, et al., 2010).

METHODS

This study was conducted in two types of urban settlements, namely: housing and non-housing. This grouping aims to see the differences between the two types of settlements. This is because, these two types of settlements have different land and building characteristics both in their basic conditions and management.

The sampling location was carried out in the city of Banjarbaru. The selection of Banjarbaru city is carried out because this city can represent urban conditions generally in Indonesia, especially in South Kalimantan.

The data in this study are community knowledge (level of education and public perception) and the pattern of private green spaces vegetation. Community knowledge was obtained using questionnaire tools. Vegetation patterns are obtained by looking at the existing conditions in the private green spaces.

Vegetation Patterns

The provision of vegetation depends on the provisions of the building basic coefficient (KDB) where for large yards the house must be provided with a minimum of three protective trees, a moderate house yard of at least two protective trees, and a small house with at least one protective tree, each of which must be added to bushes, shrubs, as well as land cover and or grass (Ministry of Public Work, 2008), based on these rules, the private green spaces vegetation patterns were formulated which became the parameter of the vegetation pattern condition in the private green spaces (Table 1).

Table 1. Criteria of Vegetation Patterns

Pola Vegetasi	Kriteria
Tanpa tumbuhan	Tidak Baik
Tumbuhan bawah (Semak, perdu, rumput)	Kurang Baik
≥1 pohon – tanpa tumbuhan bawah	Cukup Baik
1 – 2 pohon + tumbuhan bawah	Baik
≥3 pohon + tumbuhan bawah	Sangat Baik

Community Knowledge

Community knowledge is obtained from the level of community education and public understanding of the importance of the existence of private green spaces. This data was obtained using a questionnaire.

Data analysis

The analysis used to analyze the relationship between the two variables is the Serial Correlation analysis for education variables on vegetation patterns.

RESULT AND DISCUSSION

Vegetation patterns that are formed in both types of settlements indicate that both housing and non-housing areas basically have good vegetation pattern criteria (Figure 1). The very good criteria are seen in non-residential residential areas (45.0%) which already have ≥3 trees + understory. The most housing areas are categorized as good (40.0%) because it has 1-2 trees + understory in their yards.

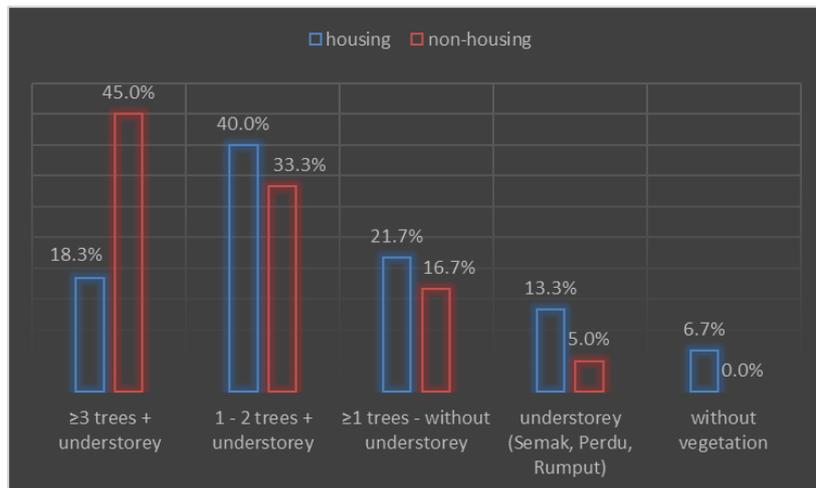


Figure 1. Settlement Vegetation Patterns Graph

The existence of trees remains as consideration in managing private green spaces. Communities in non-housing settlements (10.0%) chose to plant bushes and 6.7% who preferred not to plant (the housing) for their private green spaces (Rahmani, et al., 2016). Based on the data, descriptively it can be analyzed that the existing conditions show that good vegetation patterns have been formed in the two different types of housing. Lack of housing that has more than three trees in the yard is due to limited land provided by housing developers. On the other hand, non-housing areas with land that has relatively flexibility in land management.

Education level data obtained is divided according to type of settlement. Both types of settlements have close data in the level of education. The level of community education in both types of settlements is dominated by bachelor and high school graduate (Figure 2).

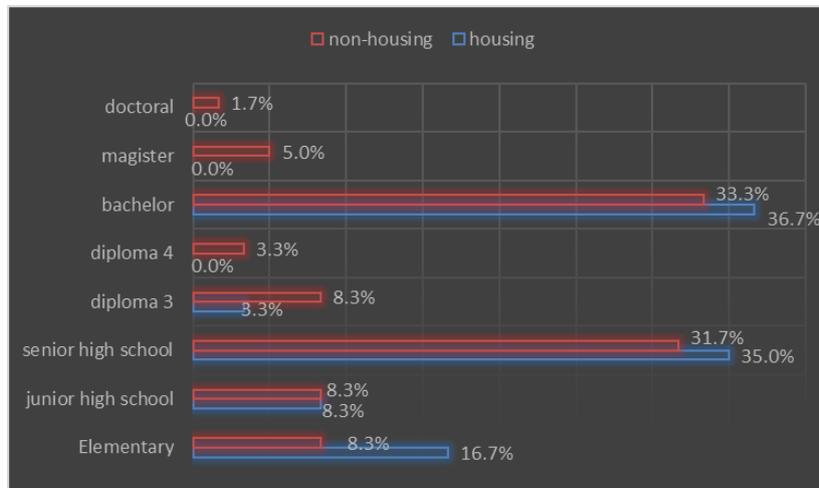


Figure 2. Community Education Level Graph

Communities with bachelor have a dominant percentage in both housing areas (36.7%) and non-housing areas (33.3%). Unbalanced distribution is seen in diploma 4 and master degrees which found only in non-housing areas (3.3%). This condition needs further study regarding the occupation and income of the community which results in differences to the residence choices.

The results of serial correlation analysis show that there is a very real relationship between the level of education on vegetation patterns. The decision is based on the value of $t_{value} = 2.931^{**} > t_{table} (0.01; 118) = 2.617$. This shows that there is a correlation between the level of education on vegetation patterns in private green spaces.

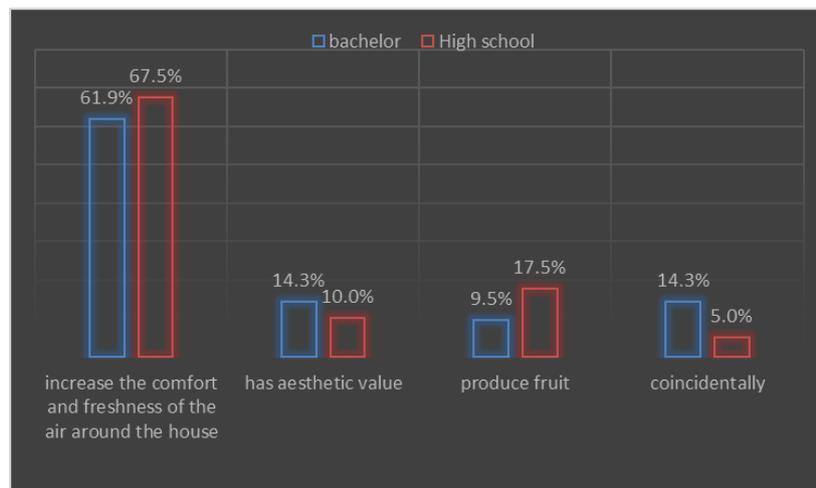


Figure 3. Reasons for choosing plants based on dominant education level

Most people were keen to actively participate in local education programs regarding city greening (24.0%), while others said they would be involved in increasing support for city greening plans (34.7%) or raising community awareness of tree care and planting activities (29.3%) (Krisdianto, et al., 2012). Most of the trees found in settlements are fruiting tree species because they can provide immediate benefits and have rapid growth (Wahyunah, Krisdianto, Kadarsah, & Rahmani, 2016).

The reason for the community at the two dominant levels of education shows the high level of public understanding of the existence of private green spaces (Figure 3). The dominant reason expressed by the community is to increase comfort and freshness of the air (bachelor = 60.9%; high school = 67.5%). Thus, it appears that the community has understood the importance of the existence of private green spaces in the yard of the houses. The understanding is derived from formal and non-formal education.

CONCLUSION

Based on the results of the study it can be concluded that the level of education influences people's understanding and the actual conditions of the private green spaces of the community. But in general, it turns out that most people have a good understanding of the existence of the private green spaces. The pattern of vegetation in the private green spaces are in accordance with the conditions for the existence of the private green spaces.

REFERENCES

- ACT Government. (2011, June). Private open space and communal open space. *Environment and Sustainable Development*.
- Balooni, K., Gangopadhyay, K., & Kumar, B. M. (2011, November). Urban Sustainability and Changing Private Green Space: Some Insights from an Indian City. *Asian Research Institute Working Paper Series No. 169*, pp. 1-20.
- Government of the Republic of Indonesia. (2007). UNDANG-UNDANG REPUBLIK INDONESIA NOMOR 26 TAHUN 2007 TENTANG PENATAAN RUANG. Indonesia.
- Krisdianto, Haryati, N. H., Ridwan, I., & Prasetya, H. (2010). BANJARBARU GREEN OPEN SPACE DISTRIBUTION AND IT'S ECOLOGICAL VALUE. Denpasar: The 2nd. International Seminar on Tropical Eco-Settlements.
- Krisdianto, Soemarno, Udiansyah, & Januwiyadi, B. (2012). What users said about urban green space: A challenge for building the resilient city of Banjarbaru, Indonesia. *International Journal of Development and Sustainability*, 62-86.
- Ministry of Public Work. (2008). Peraturan Menteri Pekerjaan Umum No.5 Tahun 2008 tentang Pedoman Penyediaan dan Pemanfaatan Ruang Terbuka Hijau di Kawasan Perkotaan. Indonesia.
- Pratiwi, S. R., Boedisantoso, R., & Hermana, J. (2012). Analisis Kecukupan Ruang Terbuka Hijau Privat Permukiman Dalam Menyerap CO2 dan Memenuhi Kebutuhan O2 Manusia di Surabaya

- Utara (Studi Kasus: Kecamatan Kenjeran). *Scientific Conference of Environmental Technology IX* (pp. 1-6). Surabaya: Institut Teknologi Sepuluh Nopember.
- Rahmani, D. R., & Wahyunah. (2018). SELEKSI TUMBUHAN PERDU SEBAGAI ALTERNATIF PENYUSUN VEGETASI RUANG HIJAU PERMUKIMAN. *Jukung (Jurnal Teknik Lingkungan)*, 56-64.
- Rahmani, D. R., Wahyunah, & Louisa, V. M. (2016). ANALISIS PERSEPSI DAN PERILAKU MASYARAKAT TERHADAP KEBERADAAN POHON PADA RUANG HIJAU PRIBADI DI PEMUKIMAN BARU DAERAH LOKTABAT UTARA KOTA BANJARBARU. *National Seminar of Environmental Engineering II* (pp. 156-163). Banjarmasin: Departement of Environmental Engineering, Faculty of engineering, Lambung Mangkurat University.
- Wahyunah, Krisdianto, Kadarsah, A., & Rahmani, D. R. (2016). VARIASI KANOPI DAN POROSITAS POHON DI RUANG HIJAU PRIBADI PERMUKIMAN BARU KELURAHAN LOKTABAT UTARA KOTA BANJARBARU CANOPY AND POROSITY VARIATION ON THE TREES IN THE PRIVATE GREEN SPACE IN LOKTABAT UTARA BANJARBARU. *Jukung (Jurnal Teknik Lingkungan)*, 61-67.