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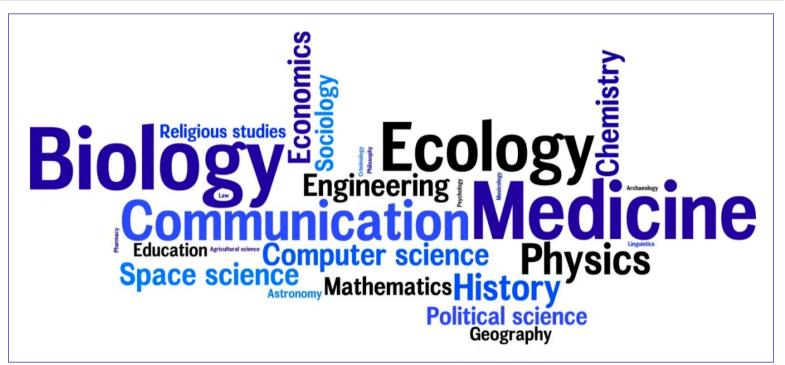
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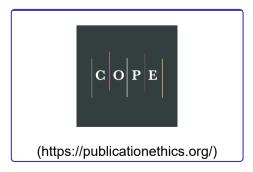
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A Novel Method of Resampling and Support Vector Machine for Brain Tumor Classification (https://scopejournal.com/published_paper/1239/A+Novel+Method+of+Resampling+and+Support+Vector+Machine+for+Brain+Tumor+Classificati R. Jayanthi1, A. Hepzibah Christinal1, R. Hephzibah1, D.Abraham Chandy2, T. Shekinah3

Abstract

Current Issue

Brain tumors are life-threatening conditions that require accurate diagnosis for effective treatment, and magnetic Resonance Imaging plays a significant role in the diagnosis of brain tumors. Categorization of the tumor type is essential for making necessary medical decisions. Brain Tumor is commonly classified as Normal, Benign, or Malignant. There is a publicly available dataset in Kaggle for brain tumor classification with classes such as meningioma, pituitary gland, glioma, and no tumor. In our work, we proposed a novel method, Smote Tomek with Support Vector Machine (SVM), for brain tumor classification. The Combined sampling technique of smote from oversampling and Tomek from Undersampling was applied to compensate for the imbalance in the data. First, we implemented the combined technique of SMOTETomek to clear this data imbalance, leading to an improvement in the results. We then fitted the balanced data to the SVM classifier. Hence, our proposed method produces the best result with an accuracy of 95% for categorizing the data as pituitary tumor or no tumor. It also provides better results in terms of other metrics such as sensitivity and specificity. This method was also compared with other competent classifiers and was found to be an effective method for the classification of brain tumor data.

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Exploring Burnout and the Potential Effects of Health Information Technology Usage among Radiologic Technologists (https://scope-

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1Sarah Douglas, 2Barbara Tafuto, 3Thomas J. Hunt

Abstract

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Purpose: To determine if the use of health information technology contributes to burnout among radiologic technologists. **Methods:** Searches for original research on burnout and the effects of health information technology among radiologic technologists were conducted in the Pub Med and Cochrane databases and the Radiology and Radiologic Technology journals from 2011 – 2024. **Results:** Moderate to high levels of burnout were seen predominantly among radiographers between thirty to forty years of age and with at least ten years of experience. The studies did not assess the effects of health information technology, and a correlation could not be established. **Conclusion:** Radiologic technologists, specifically women in radiography, are affected by burnout. Dissatisfaction with employer incentives and operations and COVID-19 mitigation strategies were contributors. Health information technology usage on burnout among radiologic technologists was not assessed, identifying opportunities to explore this field.

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Epidemiology of Cervical Cancer with Human Papilloma Virus in Ethiopia: A Mathematical Model Analysis (https://scopejournal.com/published_paper/1241/Epidemiology+of+Cervical+Cancer+with+Human+Papilloma+Virus+in+Ethiopia%3A+A+Mathem Tesfaye Tefera Mamo1

Abstract

Cervical cancer is one of the leading causes of cancer death among females worldwide and its behavior epidemiologically likes a venereal disease of low infectiousness. Early age at first intercourse and multiple sexual partners have been shown to exert strong effects on risk. Genital Human papilloma virus is the central risk factor for developing cervical cancer. Ethiopia has a population of 36.9 million women ages 15 years and older who are at risk of developing cervical cancer. Its incidence is 31.0 per 100,000 women with 7,445 annual number of new cases and 5,338 deaths every year. In order to investigate the epidemiology of cervical cancer associated with the human papillomavirus in Ethiopia, I construct mathematical model for progression of human papilloma virus with vaccination intervention; and I took into consideration nonlinear ordinary differential equations. I used a nonlinear stability analysis method for proving the local and global stability of the existing equilibrium point. I proved that the disease free equilibrium point is locally asymptotically stable. Using second generation matrix, I obtained the effective and basic reproduction number for the dynamical system. Using standard parameter estimation I found that the numerical value of effective reproduction number is and the basic reproduction number is . From this numerical value it is possible to conclude that vaccination intervention strategy is effective to control the spread of human papilloma virus diseases. The most sensitive parameter is the proportion rate of vaccinated Individuals. I also conduct numerical simulations which support the finding in the sensitivity analysis.

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Inordinate Alcohol Consumption is a Social Problem: A Study among the Lodha Tribal Population (https://scopejournal.com/published_paper/1242/Inordinate+Alcohol+Consumption+is+a+Social+Problem%3A+A+Study+among+the+Lodha+Trib Madhuparna Srivastava Subir Biswas

Abstract

Consumption of locally brewed alcoholic beverages is considered a customary practice by the indigenous communities in India. However, unrestrained alcohol use by members of the tribal communities in India has been widely reported. While most studies focus on the cultural and economic significance of ethnic beverages, lesser number of studies focuses on the impact of alcohol consumption on these populations. There is a further dearth of systematic study on the adverse social impact of alcohol consumption on the tribal

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decreased serum cholesterol levels (P < 0.05). Additionally, renal function and electrolyte balance remained stable, as evidenced by unchanged urea, creatinine, and electrolyte
profiles.Germinated V.aconitifolia supplementation demonstrates potent weight-enhancing effects, mitigating stress-induced weight loss and promoting healthy weight management,
accompanied by favourable biochemical responses. These findings suggest its potential as a dietary supplement for stress-related disorders. The bioactive compounds present in
germinated V.aconitifolia may contribute to its beneficial effects. This study provides evidence for the anti-stress potential of germinated V.aconitifolia, supporting its use as a
complementary therapy for stress-induced weight loss and metabolic disorders. Further research is warranted to explore its effects in human populations and to elucidate the
underlying mechanisms.

Abstract

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Criteria for Sustainable Neighborhood in Urban Settlement Areas: Case Studies Green Pramuka Jakarta Indonesia (https://scope $journal.com/published_paper/1260/Criteria+for+Sustainable+Neighborhood+in+Urban+Settlement+Areas%3A+Case+Studies+Green+Pramuka+Jakarta+Indonesia)$ 1Gilang Dewi Rahayu, 1Herman Sbastian Hutasuhut, 1Riswandi Rohman, 2Dedes Nurgandarum Abstract Urban neighborhoods face growing challenges in sustainability, regeneration, and livability, especially in rapidly urbanizing cities like Jakarta, Indonesia. This study develops a comprehensive assessment framework to evaluate urban areas based on Sustainable, Regenerative, and Livable Neighborhood criteria. The framework integrates global sustainability principles, Hamid Shirvani's urban design theories, and Jakarta's Detailed Spatial Plan (RTBL), adapting them to local socio-economic and environmental conditions. The Green Pramuka neighborhood serves as the case study for testing this methodology. This research employs a mixed-method approach, combining literature review, indicator development, and Likert-based guantitative scoring. Indicators are categorized into land use allocation, building design, circulation systems, green space, environmental guality, and community activity support. The assessment reveals that while Green Pramuka excels in mixed-use zoning and accessibility, it lacks community activity support, equitable green space distribution, and social inclusivity. These findings highlight the need for integrating social and ecological factors into urban design. The study presents a replicable framework for urban neighborhood assessment, adaptable across different contexts. The results provide practical insights for policymakers and urban designers, advocating for collaboration among governments, developers, and local communities. By addressing physical infrastructure and socio-economic dynamics, this research advances discussions on regenerative urban development in Indonesia and beyond. 202410793 15 341-364 PDF (https://scope-journal.com/assets/uploads/doc/edcb8-341-364.202410793.pdf) Abstract 1

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Criteria for Sustainable Neighborhood in Urban Settlement Areas: Case Studies Green Pramuka Jakarta Indonesia

¹Gilang Dewi Rahayu, ¹Herman Sbastian Hutasuhut, ¹Riswandi Rohman, ²Dedes Nurgandarum

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Abstract:Urban neighborhoods face growing challenges in sustainability, regeneration, and livability, especially in rapidly urbanizing cities like Jakarta, Indonesia. This study develops a comprehensive assessment framework to evaluate urban areas based on Sustainable, Regenerative, and Livable Neighborhood criteria. The framework integrates global sustainability principles, Hamid Shirvani's urban design theories, and Jakarta's Detailed Spatial Plan (RTBL), adapting them to local socio-economic and environmental conditions. The Green Pramuka neighborhood serves as the case study for testing this methodology. This research employs a mixed-method approach, combining literature review, indicator development, and Likert-based quantitative scoring. Indicators are categorized into land use allocation, building design, circulation systems, green space, environmental quality, and community activity support. The assessment reveals that while Green Pramuka excels in mixed-use zoning and accessibility, it lacks community activity support, equitable green space distribution, and social inclusivity. These findings highlight the need for integrating social and ecological factors into urban design. The study presents a replicable framework for urban neighborhood assessment, adaptable across different contexts. The results provide practical insights for policymakers and urban designers, advocating for collaboration among governments, developers, and local communities. By addressing physical infrastructure and socio-economic dynamics, this research advances discussions on regenerative urban development in Indonesia and beyond.

Index Terms: Sustainable, Regenerative, Livable, Urban Neighborhood, Criteria

I. Introduction

1.1 Background

Jakarta faces major challenges in sustainability, regeneration, and livability due to rapid urbanization and lack of holistic planning. Air and water pollution, unmanaged waste, and shrinking green spaces worsen environmental degradation and the urban heat island effect. Social inequality is evident in unequal access to housing, transport, and public spaces. Traffic congestion, seasonal flooding, and gentrification further threaten inclusivity. Addressing these environmental and social challenges requires sustainable urban planning to enhance ecological resilience and social equity, ensuring a more livable and regenerative urban environment.

To address these challenges, urban design must integrate sustainability principles that balance present needs with future resource availability, ensuring that natural systems continue to support life. The Earth Summit (1992) framework defines sustainability as encompassing economic development, social inclusivity, and environmental conservation.¹ Sustainable architecture, as part of this broader framework, is designed to extend the lifespan of natural resources while maintaining ecological integrity. However, sustainability alone is insufficient—urban areas must also be regenerative, meaning they should actively restore and enhance ecological and social systems rather than merely minimizing harm. Additionally, achieving a livable neighborhood requires a human-centered approach that prioritizes accessibility, safety, and well-being.² This study aims to analyze the Green Pramuka area in Jakarta to assess whether its development aligns with these three principles. The research employs an assessment framework derived from Hamid Shirvani's urban design components and Jakarta's Detailed Spatial Plan (RTBL), with evaluation indicators structured around sustainability, regeneration, and livability.

The research process involves a literature review to establish theoretical foundations, extract key indicators, and contextualize the assessment within Jakarta's urban challenges. The evaluation framework categorizes elements that support or hinder sustainability in the case study area, with findings presented through data tables, color-coded mapping, and explanatory narratives. The study's results offer insights into the strengths and deficiencies of Green Pramuka, highlighting potential improvements for developing urban spaces that integrate sustainable, regenerative, and livable principles. Ultimately, this research seeks to inform future urban planning guidelines that can create more resilient, inclusive, and environmentally responsible neighborhoods.

1.2. Research Question

- a) How to conduct an assessment of an area, within the framework of the context of Sustainable, Regenerative, Livable in a mixed use neighborhood in an urban area?
- b) How do assessment criteria and indicators measure the achievement level of sustainable urban development?
- c) How the Green Pramuka case study methodology can be applied?

1.3. Research Objectives

- a) Compile assessment ratings based on sustainable, regenerative, and livable indicators.
- b) Identify elements that support or hinder the implementation of these concepts in the context of the case study area.

c) Produce design criteria guidelines for areas that meet these three aspects.

1.4. Theoretical Studies of Concepts Sustainability, Regenerative, Livability dan Neighborhood

1.4.1. Sustainability Theory

The concepts of ecological or environmental design, green architecture, sustainable buildings and other similar terminology are essentially used interchangeably with the concept of sustainability ³. Sustainable architecture is a way in which architecture seeks to minimize the negative impact of buildings on the environment through increased efficiency and moderation in the use of materials, energy, development space, and the ecosystem at large ⁴and according to ⁵ The concept of sustainable architecture that seeks to minimize the negative impact of buildings on the environment by means of moderation and efficiency in the use of materials and energy, as well as development space and ecosystems. The main principles of sustainable architecture are energy efficiency, air conservation, waste reduction, and the use of environmentally friendly materials ⁶. Sustainability guarantees many areas by protecting the natural environment from harmful human interference for their own convenience, without realizing that most energy-consuming solutions actually lead to many universal changes that threaten the world's ecological balance 7. Maximizing energy efficiency and overall performance is paramount in sustainable architectural design. Building orientation has proven to be a strategic cornerstone in achieving sustainable goals ⁸. The following is a summary of the understanding of sustainability that the author has summarized in Diagram 1 below.

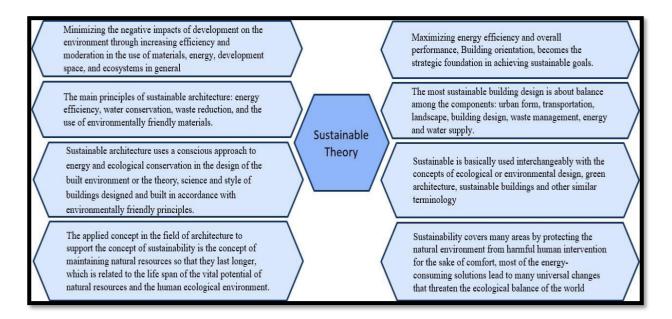


Diagram 1. The concept of Sustainable theory based on various sources

The various theories that underlie the understanding of sustainability itself have various indicators, among which can be measured physically. The following is the result of a summary of various indicators on the sustainable theory (Diagram 2.)

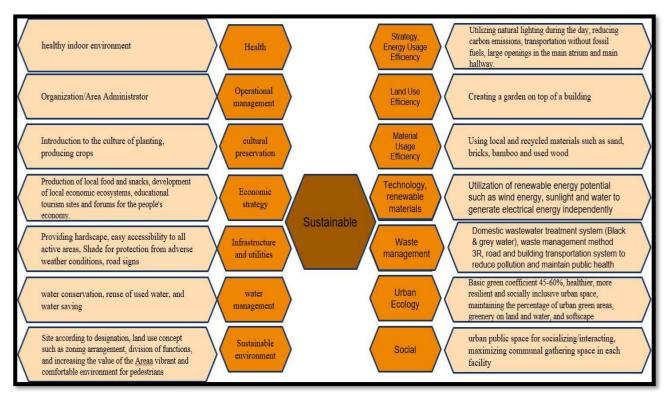


Diagram 2. .Sustainable assessment indicators are based on the Sustainable theory concept that has been created

1.4.2. Regenerative Theory.

Regenerative neighbourhoods are urban areas that designed to restore and enhance, social , and economic system, moving beyond mere sustainability to foster resilience and vitality. This concept emphasizes community involvement, integrated design, and the regeneration of urban fabric, addressing challenges such as urban decay and climate change. ⁹. In a simple term, regenerative refers to the ability of a neigborhood or community to not only minimize negative impact on the environment but also to repairand enhance the surrounding ecosystem. This concept leads to a more holistic approach where the urban environment is not only sustainable but also proactive in creating social, economic and environmental regeration.¹⁰.

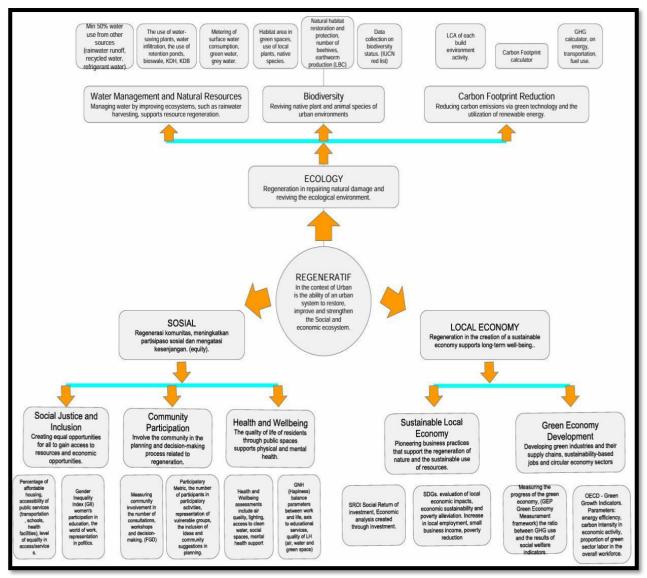


Diagram 3. The concept of Regenerative theory based on various sources

Regenerative neighborhoods aim to create sustainable urban environments by integrating ecological, social, and economic dimensions. This holistic approach seeks to enhance the quality of life while ensuring environmental health and economic viability. First is Ecological Dimension: Ecosystem Services: Regenerative design promotes urban projects that produce net-positive impacts on ecosystems, enhancing biodiversity and natural resource management, and also Ecological Diagnostics: Implementing ecological diagnostics helps inform design processes, ensuring that urban strategies align with local ecological conditions. "Secondly is Social Dimension which are Community partiipationa as a engaging community in the design and planning processes, and a cultural integration to emphazise the importance of local culture and community identity. Last are Economic Dimension with Sustainable Economic Practice and FianancialViablity.

There are three principles forming this regenerative neighborhood; first is Community Participation: Engaging local residents in decision-making proceeses to ensure that developments meet their needs. ¹². Second is Integrated Design: Utilizing a co-evolutionary approach that harmonizes social, cultural and ecological system. ¹³ Last is Sustainable Practices: The precint implementing green infrastructure and promoting biodiversity to enhance urban resilience. ¹⁴.

Regenerative has main goal is not only to reduce ecological footprint but also contribute positively to nature and human communities.¹⁵ In addition to the understanding of regenerative environments, down below we summerised regenerative theory in a figure: (Diagram 3).

1.4.3. Livability Theory

If we want to talk about there and then, acting as a philosophical vision, then many academics interpret livability as habitability where this term focuses on the here and now, paying attention to physical conditions and active interventions.

The design does not interfere with the residential units		Having green hearts that connect open spaces around the city
Adjusting to population density		Having green ways as a corridor to the city center
Supporting the diversity of land functions according to		Support/propose Hypothetical open green space system
needs		Improve quality of life
Availability of open space		Providing clean air
Supporting mobility and affordability		Enhance the beauty of the area
Supporting cleanliness		Maintaining ecological balance
Support security		Can serve: entertainment, sanitation, communication, education, and
Supporting comfort		trade
In accordance with local/surrounding culture		A quiet and peaceful place for residents
(characteristics)		Relieve boredom from urban noise and congestion
Ease of access		The existence of facilities for affordable access
Equality	LIVABILITY	Availability of health facilities
Security		The existence of facilities as a guarantee of safety and security
Comfort		Support children's play and learning activities
Available services		Facilitate the process of socialization and relaxation
Ease of walking		Supporting walking and cycling activities
Convenience of public transportation		Supports recreational activities, culinary, etc.
Effective transportation integration Easy access from residence to workplace		Focus on what is now
Access from residence to service center is easy		Focus on what's here
Correlation between transit stations		Pay attention to physical conditions and active intervention
Easy and cheap		Based on context
Providing something useful and dynamic		Availability of open spaces, transportation zones, and public
Having green belts as a buffer		facilities

Diagram 4. Livability theory concept based on various source

That is what makes livability a fluid concept because it changes based on context conditions and provides a useful and dynamic translation of this intended vision.²⁹ In addition, the meaning of livability also depends heavily on the values and specific contexts of the community as a locally dominant social, economic, and cultural background, because of the personal feelings or desires of the residents of a particular place to regulate the level of habitability of the place.²⁹ The following are the components, attributes and indicators of livability as shown in Diagram 4 and 5 below.

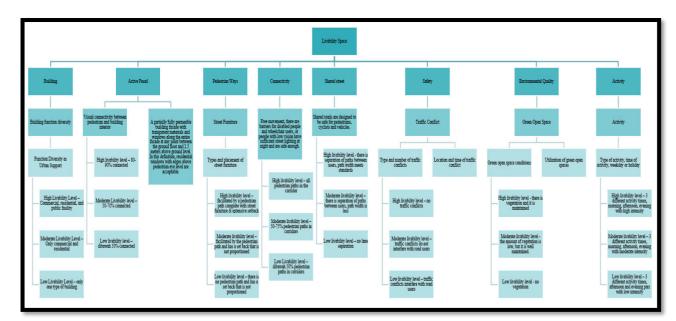


Diagram 5. Livability assessment indicators

1.4.4. Neighborhood Theory

Defining "neighborhood" is a complex undertaking, as it's a multifaceted concept encompassing both tangible characteristics and intangible qualities ¹⁶¹⁷. A neighborhood is a geographically localized community situated within a larger urban or suburban area. It's distinguished by a unique combination of physical attributes, social interactions, and shared resources. Importantly, neighborhoods are not static entities; they are shaped by social and political forces, including activism and research on socio-spatial relations, making their boundaries fluid and often contested ¹⁷. The term itself has evolved over time and can vary across cultures and languages, further adding to its complexity ¹⁸.

Recognizing Neighborhood Boundaries:

Neighborhood boundaries can be defined by a combination of factors:

- a) Physical boundaries: Geographical Context: A neighborhood is inherently geographical, rooted in urban morphology ¹⁶. This includes physical elements like the built environment, land use patterns, and boundaries ¹⁶ Natural features (rivers, hills), major roads, or changes in land use can demarcate neighborhoods.
- b) Social boundaries; Social and Political Influences: Neighborhoods are also social and political products, shaped by activism and research on socio-spatial relations ¹⁷. This highlights the dynamic and contested nature of neighborhood boundaries. Perceived social distinctions, cultural differences, or variations in socioeconomic status can create informal boundaries.
- c) Administrative boundaries: Official designations used by local governments for planning and administrative purposes can define neighborhood boundaries.

- d) Multiple Dimensions: Neighborhoods are not solely defined by physical characteristics, but also by social interactions, shared values, and access to services ¹⁶.
- e) Stakeholder Perceptions: Understanding the perceptions of different stakeholders, including residents, businesses, and local government, is crucial for successful urban regeneration ¹⁹. This requires effective communication and collaboration among all parties involved.
- f) Functional Elements: The services and amenities available to residents, such as schools, shops, healthcare facilities, and recreational opportunities, play a vital role in neighborhood life ¹⁷. Access to these resources contributes to the overall livability and well-being of the community.

Tangible vs. Intangible Aspects:

Neighborhoods are characterized by both:

- a) Tangible aspects: Physical layout, housing types, infrastructure, and demographic characteristics.
- b) Intangible aspects: Social cohesion, sense of belonging, cultural identity, shared values, and lifestyle.²⁰ emphasizes the importance of "intrinsic qualities" of urban form and local social processes.²¹ discusses the role of participatory design in shaping neighborhood identity and fostering a sense of community.

Therefore, while physical attributes are important, the intangible aspects, like culture and lifestyle, are crucial in defining a neighborhood's character and contributing to its overall livability and sustainability. ²² emphasizes the importance of participatory design and social communication in understanding and shaping neighborhood dynamics.

Citation: Understanding a neighborhood's characteristics, both tangible and intangible, is essential for designing livable areas that meet the community's needs. This knowledge enables:²³¹⁷²⁴

- a) Targeted Interventions: By understanding the specific challenges and opportunities within a neighborhood, interventions can be tailored to address local needs and priorities.
- b) Enhanced Livability: Considering the physical layout, social dynamics, and access to services allows for the creation of spaces that promote well-being, social interaction, and a strong sense of community.
- c) Sustainable Development: Understanding the interconnectedness of different elements within a neighborhood enables the development of sustainable solutions that balance environmental, social, and economic considerations.
- d) Community Empowerment: Engaging residents in the planning process, informed by a deep understanding of their neighborhood, empowers them to shape their environment and contribute to its long-term vitality.

Doing an assessment on a ngihbourhood need a holistic perspective, also not only

the livable criteria have to be considered, but also more sustainable elements. ²⁵²⁶²⁷²³ all these criteria need to employ to assest the neighbourhood. In this research the authors try to summerise the key aspect that need to consider to assesses the neighborhood for sustainable and livable criteria.

The tangible and intangible elements that composing a neighborhood, need to breakdown and examine further to understand the neighborhood as a whole.Theresearch highlights the importance of recognizing both physical and social aspects of a neighborhood, as they are interconnected and equally crucial in determining its overall livability and sustainability, underscoring the need for a multidimensional approach to neighborhood assessment

Neighborhoods play a crucial role in urban design and ecological systems, serving as vital units for human interaction and biodiversity. They are defined as regional segments of a city that maintain distinct characteristics influenced by social and physical dynamics. A neighborhood is a defined segment of a city characterized by its unique features and social interactions. ¹⁴ Neighborhoods are essential for fostering human connections and biodiversity, highlighting the need for sustainable urban planning that integrates ecological considerations.

Neighborhood in Urban has function as a facilitate social coherence and community engagement, addressing issues like crime and environmental pollution. They enhance living conditions and promote a sense of belonging among residents. Key parameters include urban morphology, public space, and architectural specifications, which influence ecological interactions. ¹²Sustainable neighborhood regeneration focuses on improving physical and social aspects while considering environmental impacts. ⁹

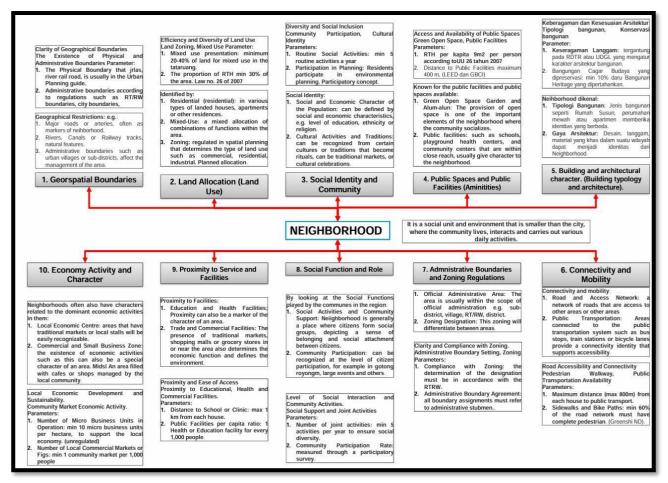


Diagram 6. The concept of Neighborhood theory based on various sources

1.5. Case Studies: Green Pramuka

Administratively, the location of the case study is partly RW 8 and RW 9, Rawasari Village, CempakaPutih District, Central Jakarta, as shown in Figure 1. This area is a residential, service, and commercial zone.

II. Research Methodology

This study is included in the quantitative research method. The method of data collection through literature studies and conducting observations in the form of observations at the research location. Literature studies are conducted to obtain design concepts. The design concept consists of matrix 1, matrix 2, and analysis tables. This design concept will be tested against residential and urban areas. The case study is in Rawasari Jakarta Indonesia with an area of 30 hectares. From this area will be divided into 30 sub-areas to be analyzed. The Likert scale was chosen for its ability to standartdize subjective evaluations, providing comparability across various urban sustainability indicators.

2.1. Formulation of Design Criteria Concept

a) Concept Formulation Matrix per Criteria

Based on the results of a literature study that produces the meaning of theory, components, and attributes per criterion sustainability, regenerative, livability dan neighborhood then the next step is to make Matrix I (Formulation of Indicator Concepts per Criteria) related to the RTBL + Hamid Shirvani design component. Matrix I is produced from theoretical analysis based on the results of literature studies which are strengthened by the existence of legal aspects (regulations) and precedents (examples) of the region. The following is an example of the Matrix I table used in this study.

b) Matrix of Formulation of Sustainability, Regenerative, Livability and Neighborhood Analysis Components

Matrix II is a matrix created after formulating the concept of indicators per criteria. The results of Matrix II are the combined results of the concept of sustainability, regenerative, livability and neighborhood indicators as well as assessment parameters per design component. The final items of the resulting parameters will be assessed and a linkert scale will be made as a reference for assessment. The following is an example of the Matrix II table that has been described.

Table 1. Matrix 1: Combination matrices that translate/explain theories or concepts on operational indicators; especially those that will be used in the context of an area or an build environment.

	COMPONENT OF	ANALYSIS - FOI	RMULATION O	F INDICATOR (CONCEPTS PER	CRITERIA						
	(THEORY - PRESEDEN – LEGAL ASPECT)											
DESIGN COMPONENTS RTBL + HAMID SHIRVANI	SUSTAINABII	CONCEPT										
	THEORY - CONCEPT	LEGAL ASPECT	PRECEDENT PRECEDENT PRECEDE									
Land Use Structure												
Land Use Intensity												
Building Layout												
Circulation System and Connecting Paths												
Open space and green layout												
Environmental Quality Management												
Infrastructure - Utilities												
Activity Support												
Conservation/Preservation												

Table 2. Matrix II is an explanation of how the researcher identified each indicator in the Measurable form so that both the value and the rating can be

DESIGN COMPONENTS	INDICATOR CONCEPT											
RTBL + HAMID SHIRVANI	LIVABILITY	SUSTAINABILITY	REGENERATIVE	NEIGHBORHOOD	FINAL KONSEP + PARAMETER							
Land Use Structure												
Land Use Intensity												
Building Layout												
Circulation System and Connecting Paths												
Open space and green layout												
Environmental Quality Management												
Infrastructure - Utilities												
Activity Support												
Conservation/Preservation												

quantified.

2.2. Likert Analysis and Scale Table

After creating matrix II, the next step is to create an analysis table equipped with a linkert scale with points 1-5. The number of final items of the concept and parameters will be multiplied by the maximum value of the linkert point which is 5. For example, in the components of the land use structure, the final concept and parameters amount to 7 items with a maximum value of 35 points, then they are mentioned in order, namely land use intensity (maximum 90 points), building planning (maximum 35 points), circulation system and connecting paths (maximum 10 points), open space and green management (maximum 25 points), environmental quality management (maximum 15 points), Infrastructure-Utilities (maximum 30 points), Activity Support (maximum 20 points), and Conservation/Preservation (maximum 30 points). So the total totallinkert points is 390 points.

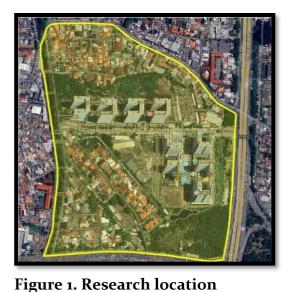
Table 3. The assessment table is based on the Likert scale, in each component, this table will be used on the thirty data, which is obtained from the grid distribution from the "Green Pramuka" location map that will be evaluated. The output is that the researcher gets a rating or quality score from each data or series.

				POINT LIKERT				s	CORING	DA NUM	TA IBER
DESIGN COMPONENTS RTBL + HAMID SHIRVANI	FINAL CONCEPT + PARAMETERS	PROOF DATA	1	2	3	4	5	POINT (N)	SCORING (B) (N) / (TN)	POINT	DATA
Land Use Structure								35	0,0897		
Land Use Intensity								90	0,2308		
Building Design								35	0,0897		
Circulation System and Connecting Paths								110	0,2821		
Open space and green layout								25	0,0641		
Environmental Quality Management								15	0,0385		
Infrastructure - Utilities								30	0,0769		
Activity Support								20	0,0513		
Conservation/Preservation								30	0,0769		
TOTAL (TN									1,00		

Based on a total point of 390, a weight (B) can be made per design component of points (N) divided by total (TN). For example, in the component of the land use structure, the weight is 0.0897, meaning that the total points of the land use structure will contribute 0.0897 from the total final assessment of the area. The following is an example of the analysis table used in this study.

2.3. Location Determination, Samples and Data Collection

The analysis table that has been explained in the previous section will be used as an assessment instrument (evaluation) of the case study to determine the extent to which the area is included in the criteria of a sustainable neighborhood. The case study of this research is in the RawasariCempakaPutih Urban Village, Jakarta, in the form of the Green Pramuka Apartment, residential areas, commercial areas, and green areas around Green Pramuka. The boundary of the research location is as shown in Figure 8 below.



samples



Figure 2. 30 research

The research site is divided into several sample areas with the assumption that the area is almost the same. The boundaries between areas are limited by imaginary lines based on road patterns or green open spaces. The divided areas are used as research samples totaling 30 samples as in Figure 9. According to 28 for correlation research, a sample of 30 respondents is required. These samples are analyzed through direct observation and assessed based on parameter items that have been equipped with a linkert scale and assessment weights. The details of the final values and weights will consist of: value weight o-1 does not meet/suitable; value weight >1-2 less meet/suitable; value weight >2-3 quite meet/suitable; weight >3-4 already meets/suitable; and value weight >4-5 very meet/suitable. The results of the sample area assessment will be summarized and equipped with a color code. The weight value \leq 1 is colored red, the weight value 1 to 2 is colored yellow, the weight value 2 to 3 is colored green, the weight value 3 to 4 is colored light blue, and the weight value 4 to 5 is colored dark blue.

III. Result and Discussion

These are the steps of How the author do the assessment from each grid from the map delineating of Green Pramuka Area.

- a) The researchers divided the map into 30 grid areas, using roads as the basis for the grouping.
- b) They employed the Likert scale as a tool to conduct an assessment, evaluating how each grid area addressed the sustainable and livable criteria.
- c) After collecting data from the 30 grid areas, the researchers were able to determine the extent to which each area fulfilled the Sustainable, Regenerative, and Livable parameters that had been established.

- d) Using the Likert scale, the researchers also determined the scoring for each grid area, and based on this data, they were able to ascertain the ranking of each grid.
- e) The researchers then proceeded to conduct a spatial analysis to examine the distribution patterns of the data in the form of a map. Consequently, when a recapitulation was performed, a table emerged, wherein the colors representing the assessment results for each component of each grid area provided a clear picture of the Sustainable, Regenerative, and Livable suitability scales.

The data presented in the table allows us to analyze the relationship between the performance of each grid area and the overall assessment of the various elements within the neighborhood. The data presented in the table reveals that even if a grid area scores poorly in land use intensity, as indicated by a red color on the Likert scale, the overall score for that grid could still be relatively high. This is contingent on the other components, such as circulation, open space, and utility, being assessed as blue, signifying positive performance.

KO	MPONEN									Onen Sr	pace and							(KOMP	ONEN		í.
	GRID		e Allocation oning)	Land Us	e Intensity	Buil	ding		tion and activity	Gn	een ructure		nmental ality		cture and ility		nunity lities		ation and vation			GRID		COMPONENT PO
	KRITERIA	KRITERIA			90		5	1	10		25		15		80		20		0	390				4-5
STAND ART		NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	NILAI	BOBOT	TOTAL		DATA	RATING	3,2-4
STAP	BOBOT KOMPONEN		0,0897		0,2308		0,0897		0,2821		0,0641		0,0385		0,0769		0,0513		0,0769	1,00				1,8-2,4
ATA	15	2,143	2,1429	1,222	0,0564	1,000	0,0179	2,682	0,1513	1,800	0,0231	3,000	0,0231	2,500	0,0385	1,250	0,0128	1,000	0,0154	144,0	0,2979	15	29,8%	1 - 1,8
ATA	18	2,143	0,0385	1,111	0,0513	2,429	0,0436	2,500	0,1410	2,200	0,0282	2,333	0,0179	1,667	0,0256	1,500	0,0154	1,667	0,0256	151,0	0,3150	18	31,5%	
ATA	3	1,571	0,0282	1,222	0,0564	1,571	0,0282	2,500	0,1410	1,000	0,0128	5,000	0,0385	2,667	0,0410	1,500	0,0154	1,333	0,0205	149,0	0,3296	3	33,0%	RATING GRID
ATA	4	1,571	0,0282	1,333	0,0615	1,571	0,0282	2,500	0,1410	1,000	0,0128	5,000	0,0385	2,667	0,0410	1,500	0,0154	1,333	0,0205	151,0	0,3316	4	33,2%	ENVIRONMENTAL 0
ATA	2	2,429	0,0436	1,333	0,0615	1,571	0,0282	2,500	0,1410	1,000	0,0128	5,000	0,0385	2,667	0,0410	1,500	0,0154	1,333	0,0205	157,0	0,3470	2	34,7%	SPECIAL S0-70% VERV GOOD
ATA	27	2,714	0,0487	2,111	0,0974	3,571	0,0641	2,391	0,1349	1,400	0,0179	2,333	0,0179	3,167	0,0487	1,250	0,0128	1,333	0,0205	183,0	0,3638	27	36,4%	30-50%
ATA	28	2,714	0,0487	2,167	0,1000	3,571	0,0641	2,391	0,1349	1,400	0,0179	2,333	0,0179	3,167	0,0487	1,250	0,0128	1,333	0,0205	184,0	0,3648	28	36,5%	G000 10-30%
АТА	5	2,286	0,0410	1,167	0,0538	1,571	0,0282	2,500	0,1410	1,000	0,0128	5,000	0,0385	2,667	0,0410	3,500	0,0359	1,333	0,0205	161,0	0,3774	5	37,7%	6.10%
ATA	30	3,857	0,0692	1,444	0,0667	1,000	0,0179	2,864	0,1615	4,000	0,0513	2,333	0,0179	1,667	0,0256	2,000	0,0205	2,333	0,0359	182,0	0,3859	30	38,6%	VERY BAD
ATA	16	2,429	0,0436	2,222	0,1026	2,286	0,0410	2,773	0,1564	3,600	0,0462	2,333	0,0179	2,833	0,0436	1,250	0,0128	1,833	0,0282	192,0	0,3870	16	38,7%	
ATA	22	3,714	0,0667	2,278	0,1051	3,714	0,0667	2,261	0,1275	1,600	0,0205	2,333	0,0179	3,667	0,0564	1,000	0,0103	2,167	0,0333	199,0	0,4080	22	40,8%	
ATA	17	3,571	0,0641	1,778	0,0821	2,714	0,0487	2,636	0,1487	3,400	0,0436	3,667	0,0282	2,000	0,0308	2,000	0,0205	2,333	0,0359	196,0	0,4326	17	43,3%	
ATA	23	3,571	0,0641	1,778	0,0821	3,857	0,0692	2,304	0,1300	1,400	0,0179	3,667	0,0282	4,000	0,0615	2,000	0,0205	2,167	0,0333	196,0	0,4441	23	44,4%	
ATA	1	3,714	0,0667	1,889	0,0872	1,571	0,0282	2,500	0,1410	5,000	0,0641	5,000	0,0385	2,667	0,0410	2,500	0,0256	1,333	0,0205	200,0	0,4698	1	47,0%	
ATA	25	3,571	0,0641	2,278	0,1051	4,143	0,0744	3,609	0,2036	1,600	0,0205	4,333	0,0333	4,400	0,0677	1,500	0,0154	1,833	0,0282	238,0	0,4894	25	48,9%	
ATA	21	4,143	0,0744	2,833	0,1308	3,571	0,0641	2,304	0,1300	3,200	0,0410	3,667	0,0282	3,667	0,0564	1,500	0,0154	2,667	0,0410	229,0	0,4945	21	49,5%	
ATA	24	3,857	0,0692	2,444	0,1128	3,714	0,0667	3,435	0,1938	2,800	0,0359	3,667	0,0282	3,833	0,0590	2,500	0,0256	2,000	0,0308	246,0	0,5071	24	50,7%	
ATA	19	3,000	0,0538	2,278	0,1051	3,571	0,0641	2,682	0,1513	2,600	0,0333	5,000	0,0385	3,333	0,0513	4,500	0,0462	1,500	0,0231	221,0	0,5109	19	51,1%	
ATA	12	2,714	0,0487	2.056	0,0949	3.571	0,0641	2.864	0,1615	3.400	0,0436	5.000	0.0385	3.333	0,0513	4.000	0,0410	2,167	0,0333	225,0	0,5224	12	52,2%	
ATA	11	3,143	0,0564	2,056	0,0949	3,571	0,0641	2,864	0,1615	3,400	0,0436	5,000	0,0385	3,333	0,0513	4,000	0,0410	2,167	0,0333	228,0	0,5301	11	53,0%	
ATA	14	2,714	0,0487	2,056	0,0949	3,571	0,0641	2,682	0,1513	3,400	0,0436	5,000	0,0385	3,333	0,0513	5,000	0,0513	2,167	0,0333	225,0	0,5371	14	53,7%	
ATA	29	3.857	0.0692	2111	0.0974	3.571	0.0641	3.261	0.1839	4,800	0.0615	3.667	0.0282	3.833	0.0590	2.250	0.0231	3.000	0.0462	250.0	0.5448	29	54,5%	
ATA	13	2,714	0.0487	2.056	0.0949	3.571	0.0641	3.227	0.1821	3,400	0.0436	5.000	0.0385	3.333	0.0513	5.000	0.0513	2.167	0.0333	237.0	0.5469	13	54,7%	
ATA	20	3,429	0.0615	2,556	0.1179	3.571	0.0641	2.773	0,1564	3,400	0,0436	5,000	0.0385	3.333	0.0513	5,000	0.0513	2.000	0.0308	240,0	0,5575	20	55,8%	
ATA	6	3.857	0,0692	1,556	0,0718	1.571	0.0282	2.864	0,1615	5,000	0,0641	5,000	0.0385	4,500	0,0692	3,500	0.0359	4,333	0,0667	236,0	0,5375	6	57,8%	
ATA	26	4,714	0,0032	2,500	0.1154	4,143	0,0282	3,565	0,2011	3,200	0.0410	4,333	0.0333	4,500	0.0692	2,750	0.0282	3.167	0.0487	275.0	0,5770	26	59.0%	
ATA	7	3,857	0,0692	1,778	0.0821	3,857	0,0692	2,955	0,1667	5,200	0,0410	5.000	0.0385	4,500	0.0692	3,500	0,0202	4,333	0.0667	258.0	0,6243	7	62,4%	
ATA	10	3,857	0,0692	1,778	0,0821	3,857	0,0692	3,136	0,1007	5,000	0,0641	5,000	0,0385	4,500	0,0692	3,500	0,0359	4,333	0,0667	262.0	0,6245	10	62,8%	
ATA	8	5,000	0,0692	1,778	0,0821	4,429	0,0892	3,130	0,1769	5,000	0,0641	5,000	0,0385	4,500	0,0692	4,500	0,0359	5,000	0,0067	298.0	0,6275	8		
222.00	9				5700300		10000		1.120.000		1000		Stores.	1.11.200	100000000	e www.c.	17800000	2000 C.C.S.	10000000	121.351			70,1%	
ATA	9	5,000	0,0897	1,778	0,0821	4,429	0,0795	3,955	0,2231	5,000	0,0641	5,000	0,0385	4,833	0,0744	4,500	0,0462	5,000	0,0769	302,0	0,7089	9	70,9%	1

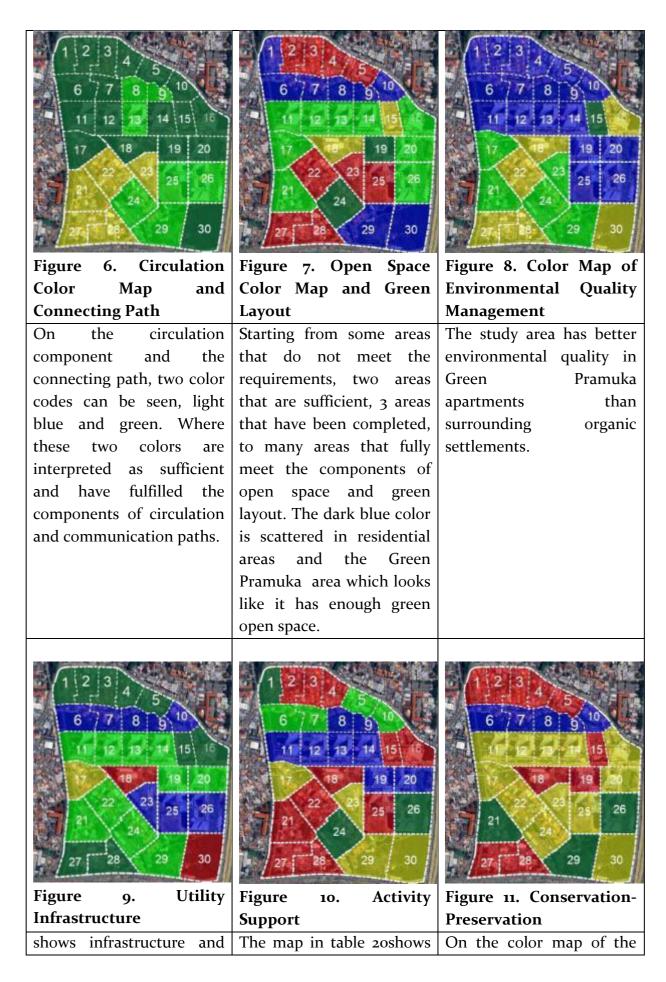
 Table 4. Recapitulation Table of Analysis Results

Furthermore, the table suggests that grid areas with a red-scale assessment can be elevated to a blue-scale, indicating the potential for those areas to achieve

355 www.scope-journal.com

regenerative status. However, this would require the implementation of comprehensive strategies to improve the grid performance across the evaluated criteria.

1 2 3 6 7 8 9 10 11 12 13 14 5 10 1 2 2 23 25 26 21 24 29 30	1 2 3 4 5 10 6 7 8 5 10 1 2 3 1 15 1 2 3 1 15 1 2 3 1 15 1 2 2 1 15 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3	12 3 4 5 10 6 7 8 9 15 11 12 13 14 15 17 18 19 20 25 26 21 24 29 30 30
Figure 3. Land Use Structure	Figure 4.Land Use	Figure - Puilding Layout
	Intensity	Figure 5.Building Layout
There are 5 sample areas	Several areas that are	Number 25 and 26 have a
that have a dark blue color	considered not to meet or	dark blue color code which
which can be interpreted	in accordance with the	can be interpreted as the
as an area that is very	components of the land	area with the most
suitable for the	use intensity design. In	building layout according
components of the design	particular, it can be seen in	to the sustainable
of the land use structure.	the sample area number 30	neighborhood criteria.
	whose land use is only	Meanwhile, the light blue
	active and passive open	color code is spread across
	space. In the recapitulation	residential areas or villages
	table, it is also clear that	and most of the Green
	•	
	sample number 30 is the	Pramuka apartment area.
	worst area for assessing	
	land use.	



utilities concentrated in	a lack of activity support in	conservation-preservation
Green Pramuka	organic settlements,	component, it can be seen
apartments and nearby	contrasting with Green	that the Green Pramuka
housing, emphasizing the	Pramuka apartments,	area and its surroundings
need for careful planning	indicating a social gap	do not attach importance
in residential and	limiting residents' access to	to conservation and
apartment developments.	supportive facilities.	preservation issues. So that
		the recapitulation of the
		assessment only ranges
		between less and enough.
		Although again in sample
		number 26 (Green
		Pramuka apartment area).

Based on the recapitulation table, the final rating of the assessment for 30 samples ranges from 0.3040 to 0.5915. Areas scoring 0.4130 to 0.5915 (green) meet sustainable neighborhood criteria, while those scoring 0.3040 to 0.3958 (yellow) do not. The final rating represents the average weight of each design component, where individual component values significantly impact the overall ranking.

The weight of each component is determined by the number of indicators and parameters it contains. A higher number of indicators increases the component's weight, affecting the final rating. However, if a component has a high weight but low Likert scale scores, the final rating will still be low. This is evident in the comparison between sample 20 and sample 26. It had more dark blue values (4) compared to sample 20 (3), yet its final rating was slightly lower. This discrepancy occurred because sample 20 had higher scores in the open space, green layout, and activity support components, increasing its final weighted value.

Furthermore, the color-coded visualization of each design component provides a clear spatial representation of sustainability levels. The bluer an area appears, the higher its Likert score, indicating better sustainability performance. Conversely, lower-scoring areas shift towards red, signifying poorer conditions. This visual mapping enhances the assessment's clarity by illustrating spatial variations in urban sustainability quality.

Color Distribution Map Table Based on Rating per Design Component

In addition to the image of the color distribution map of each design component, the following is an image of the visualization of the distribution map of the suitability of sustainable neighborhood criteria based on the final results of the assessment rating rating. There are two types of color codes, namely green which means enough to meet the criteria and yellow which means it does not meet the criteria of a sustainable neighborhood. The green color is scattered in the Green Pramuka apartment area and

several housing or villages that have open spaces. Meanwhile, the yellow color code is scattered in residential areas or villages that lack open space and are close to the main road when viewed on the existing satellite map conditions.



Figure 12. Color Distribution Map Based on Final Rating

IV. Conclusion

4.1. Key Findings

The assessment framework for this study was developed by synthesizing established global concepts of sustainability, regeneration, and livability, which were adapted to the local urban context of Jakarta. The choice of Hamid Shirvani's principles and the

RTBL design components as the foundational framework was guided by their relevance to spatial design and urban planning in densely populated areas. These frameworks provide a structured approach to evaluate physical, social, and environmental dimensions comprehensively. Moreover, the Likert scoring system was selected for its simplicity and ability to standardize subjective evaluations across multiple indicators, ensuring comparability between different elements of the study. This structured yet adaptable framework ensures that the evaluation aligns with both theoretical rigor and practical application in urban design, particularly for mixed-use developments like Green Pramuka.

This study shows that the Green Pramukaarea has significant potential to meet the criteria of Sustainable, Regenerative, and Livable Neighbourhood, although there are several weaknesses that need to be improved. The main advantage lies in:

- The structure of land allocation has met the principle of mixed-use zoning with the integration of residential, commercial areas, and green space.
- The building layout is relatively well planned, especially in the apartment area, so as to provide comfort and accessibility for residents.
- Adequate environmental quality management in several apartment areas with green facilities, ventilation, and good air quality.

However, this study also identified several shortcomings, including:

- Green open space and green layout are still limited to apartment areas, while the surrounding residential areas lack adequate green space.
- Infrastructure and utilities that are not completely evenly distributed, especially in organic settlement areas that tend to be underserved.
- Uneven activity support, causing a social gap between apartment residents and residents of surrounding settlements.
- Conservation and preservation are less of a concern, both in terms of historical buildings and ecological habitat preservation.

Overall, the Green Pramuka area is at the level of "quite fulfilling" in the criteria of sustainable neighborhood, but still needs improvement efforts to achieve regenerative and fully livable status.

While the scoring results provide valuable insights into the achievement levels of various indicators, it is evident that certain elements, such as activity support and the distribution of green spaces, performed poorly in the Green Pramuka study. This underperformance can be attributed to gaps in urban design planning, such as the limited integration of community-focused facilities and uneven accessibility to public amenities. These deficiencies highlight the need to prioritize inclusivity, equitable access to resources, and the enhancement of community infrastructure in future urban developments. The lack of balance between physical infrastructure and social wellbeing undermines the broader goals of sustainability and livability. Policy reforms should prioritze inclusive infrastructure, equitable green space distribution, and

stronger community in urban planning.

The evaluation offers numerous insights into enhancing an area's livability or even making it more regenerative. Using the provided parameters (table), designers can identify low-hanging fruit, allowing for improvements with minimal effort relative to the area's internal conditions. This approach provides urban planners with multiple options when undertaking urban renewal projects. Each component can potentially be improved to create a better-performing environment for residents. For example, if land use is poor, urban planners or designers can select components that will enhance the area within budget constraints, as cost is often a primary concern in urban revitalization efforts.

The rating system developed in this study can be easily applied to other areas to evaluate sustainability, regeneration, and livability. With an indicator, attribute and parameter-based approach, the system enables:

- Comprehensive: Combining various physical (land use structure, land use intensity) and non-physical (social quality and inclusivity) aspects.
- Adaptive: Indicators can be adjusted to the specific conditions of the region being assessed.
- Visual and Easy to Understand: The use of color recapitulation makes it easy to quickly analyze the condition of the area.

The application of these ratings to other regions also provides important insights for:

- Identify improvement priorities on specific components.
- Comparing the level of sustainability between regions, especially in the context of urbanization in big cities such as Jakarta.

4.2. Research Implications

This study's methodology is practical for evaluating urban neighborhoods and adaptable to various socio-economic contexts. The rating system applies to mixed-use and informal areas, identifying improvement priorities. Scalability requires localized data, while replicability depends on standardized data collection and GIS integration to enhance spatial insights for urban planners and policymakers.

4.3. The Importance of Collaboration.

Achieving a regenerative region requires collaboration among the government, developers, and communities. The government ensures sustainability standards and provides incentives for regenerative development, while developers integrate sustainable, regenerative, and livable principles, balancing economic, social, and environmental benefits. Communities actively participate in planning to align designs with local needs. This synergy fosters holistic sustainability, creating an inclusive, livable, and regenerative urban environment..

4.4. Recommendations for Further Research

Future research should refine sustainability, regeneration, and livability indicators

for Indonesia, assessing their relevance in local social, cultural, and economic contexts. Integrating GIS-based socio-economic mapping can improve analysis of public facility access, economic activity, and infrastructure disparities, helping identify social inequalities and guiding inclusive urban planning for more context-sensitive sustainability strategies.

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Scope

Criteria for Sustainable Neighborhood in Urban Settlement Areas: Case Studies Green Pramuka Jakarta Indonesia.

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Abstract: Urban neighborhoods face growing challenges in sustainability, regeneration, and livability, especially in rapidly urbanizing cities like Jakarta, Indonesia. This study develops a comprehensive assessment framework to evaluate urban areas based on Sustainable, Regenerative, and Livable Neighborhood criteria. The framework integrates global sustainability principles, Hamid Shirvani's urban design theories, and Jakarta's Detailed Spatial Plan (RTBL), adapting them to local socio-economic and environmental conditions. The Green Pramuka neighborhood serves as the case study for testing this methodology.

This research employs a mixed-method approach, combining literature review, indicator development, and Likert-based quantitative scoring. Indicators are categorized into land use allocation, building design, circulation systems, green space, environmental quality, and community activity support. The assessment reveals that while Green Pramuka excels in mixed-use zoning and accessibility, it lacks community activity support, equitable green space distribution, and social inclusivity. These findings highlight the need for integrating social and ecological factors into urban design.

The study presents a replicable framework for urban neighborhood assessment, adaptable across different contexts. The results provide practical insights for policymakers and urban designers, advocating for collaboration among governments, developers, and local communities. By addressing physical infrastructure and socio-economic dynamics, this research advances discussions on regenerative urban development in Indonesia and beyond.

Index Terms: Sustainable, Regenerative, Livable, Urban Neighborhood, Criteria

I. Introduction

1.1 Background

Jakarta faces major challenges in sustainability, regeneration, and livability due to rapid urbanization and lack of holistic planning. Air and water pollution, unmanaged waste, and shrinking green spaces worsen environmental degradation and the urban heat island effect. Social inequality is evident in unequal access to housing, transport, and public spaces. Traffic congestion, seasonal flooding, and gentrification further threaten inclusivity. Addressing these environmental and social challenges requires sustainable urban planning to enhance ecological resilience and social equity, ensuring a more livable and regenerative urban environment.

To address these challenges, urban design must integrate sustainability principles that balance present needs with future resource availability, ensuring that natural systems continue to support life. The Earth Summit (1992) framework defines sustainability as encompassing economic development, social inclusivity, and environmental conservation.¹ Sustainable architecture, as part of this broader framework, is designed to extend the lifespan of natural resources while maintaining ecological integrity. However, sustainability as a cological and social systems rather than merely minimizing harm. Additionally, achieving a livable neighborhood requires a human-centered approach that prioritizes accessibility, safety, and well-being.² This study aims to analyze the Green Pramuka area in Jakarta to assess whether its development aligns with these three principles. The research employs an assessment framework derived from Hamid Shirvani's urban design components and Jakarta's Detailed Spatial Plan (RTBL), with evaluation indicators structured around sustainability, regeneration, and livability.

The research process involves a literature review to establish theoretical foundations, extract key indicators, and contextualize the assessment within Jakarta's urban challenges. The evaluation framework categorizes elements that support or hinder sustainability in the case study area, with findings presented through data tables, color-coded mapping, and explanatory narratives. The study's results offer insights into the strengths and deficiencies of Green Pramuka, highlighting potential improvements for developing urban spaces that integrate sustainable, regenerative, and livable principles. Ultimately, this research seeks to inform future urban planning guidelines that can create more resilient, inclusive, and environmentally responsible neighborhoods.

1.2. Research Question

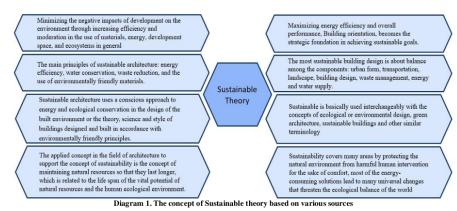
- a) How to conduct an assessment of an area, within the framework of the context of Sustainable, Regenerative, Livable in a mixed use neighborhood in an urban area?
- b) How do assessment criteria and indicators measure the achievement level of sustainable urban development?
- c) How the Green Pramuka case study methodology can be applied?

1.3. Research Objectives

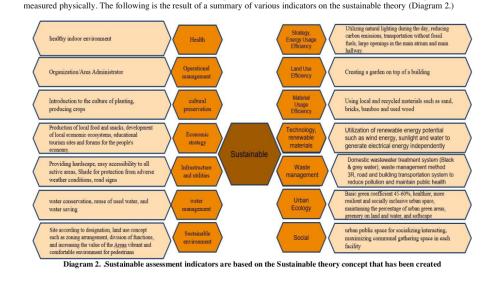
- a) Compile assessment ratings based on sustainable, regenerative, and livable indicators.
- b) Identify elements that support or hinder the implementation of these concepts in the context of the case study area.
- c) Produce design criteria guidelines for areas that meet these three aspects.

1.4. Theoretical Studies of Concepts Sustainability, Regenerative, Livability dan Neighborhood 1.4.1. Sustainability Theory

The concepts of ecological or **env**ironmental design, green architecture, sustainable buildings and other similar terminology are essentially used interchangeably with the concept of sustainability ³. Sustainable architecture is a way in which architecture seeks to minimize the negative impact of buildings on the environment through increased efficiency and moderation in the use of materials, energy, development space, and the ecosystem at large ⁴ and according to ⁵ The concept of sustainable architecture that seeks to minimize the negative impact of buildings on the environment by means of moderation and efficiency in the use of materials and energy, as well as development space and ecosystems. The main principles of sustainable architecture are energy efficiency, air conservation, waste reduction, and the use of environmentally friendly materials ⁶. Sustainability guarantees many areas by protecting the natural environment from harmful human interference for their own convenience, without realizing that most energy-consuming solutions actually lead to many universal changes that threaten the world's ecological balance ⁷. Maximizing energy efficiency and overall performance is paramount in sustainable architectural design. Building orientation has proven to be a strategic cornerstone in achieving sustainable Balance ⁸. The following is a summary of the understanding of sustainability that the author has summarized in Diagram 1 below.



The various theories that underlie the understanding of sustainability itself have various indicators, among which can be



1.4.2. Regenerative Theory.

Regenerative neighbourhoods are urban areas that designed to restore and enhance, social, and economic system, moving beyond mere sustainability to foster resilience and vitality. This concept emphasizes community involvement, integrated design, and the regeneration of urban fabric, addressing challenges such as urban decay and climate change.⁹ In a simple term, regenerative refers to the ability of a neigborhood or community to not only minimize negative impact on the environment but also to repair and enhance the surrounding ecosystem. This concept leads to a more holistic approach where the urban environment is not only sustainable but also proactive in creating social, economic and environmental regeration.¹⁰.

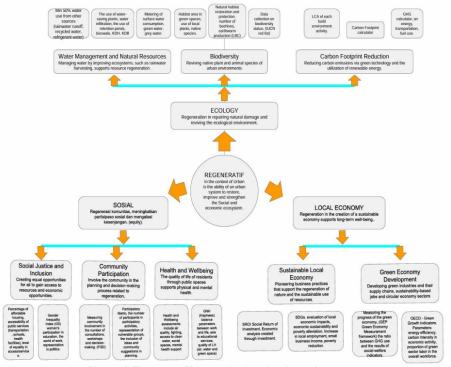


Diagram 3. The concept of Regenerative theory based on various sources

Regenerative neighborhoods aim to create sustainable urban environments by integrating ecological, social, and economic dimensions. This holistic approach seeks to enhance the quality of life while ensuring environmental health and economic viability. First is Ecological Dimension: Ecosystem Services: Regenerative design promotes urban projects that produce net-positive impacts on ecosystems, enhancing biodiversity and natural resource management, and also Ecological Diagnostics: Implementing ecological diagnostics helps inform design processes, ensuring that urban strategies align with local ecological conditions. ¹¹Secondly is Social Dimension which are Community partilipationa as a engaging community in the design and planning processes, and a cultural integration to emphazise the importance of local culture and community identity. Last are Economic Dimension with Sustainable Economic Practice and Fianancial Viablity.

There are three principles forming this regenerative neighborhood; first is Community Participation: Engaging local residents in decision-making processes to ensure that developments meet their needs. ¹². Second is Integrated Design: Utilizing a co-evolutionary approach that harmonizes social, cultural and ecological system. ¹³ Last is Sustainable Practices: The precint implementing green infrastructure and promoting biodiversity to enhance urban resilience. ¹⁴.

Regenerative has main goal is not only to reduce ecological footprint but also contribute positively to nature and human communities.¹⁵ In addition to the understanding of regenerative environments, down below we summerised regenerative theory in a figure: (Diagram 3).

1.4.3. Livability Theory

If we want to talk about there and then, acting as a philosophical vision, then many academics interpret livability as habitability where this term focuses on the here and now, paying attention to physical conditions and active interventions.



Diagram 4. Livability theory concept based on various source

That is what makes livability a fluid concept because it changes based on context conditions and provides a useful and dynamic translation of this intended vision.²⁹ In addition, the meaning of livability also depends heavily on the values and specific contexts of the community as a locally dominant social, economic, and cultural background, because of the personal feelings or desires of the residents of a particular place to regulate the level of habitability of the place.²⁹ The following are the components, attributes and indicators of livability as shown in Diagram 4 and 5 below.

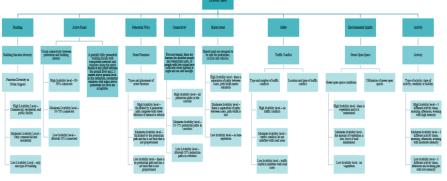


Diagram 5. Livability assessment indicators

1.4.4. Neighborhood Theory

Defining "neighborhood" is a complex undertaking, as it's a multifaceted concept encompassing both tangible characteristics and intangible qualities ¹⁶⁻¹⁷. A neighborhood is a geographically localized community situated within a larger urban or suburban area. It's distinguished by a unique combination of physical attributes, social interactions, and shared resources. Importantly, neighborhoods are not static entities; they are shaped by social and political forces, including activism and research on socio-spatial relations, making their boundaries fluid and often contested ¹⁷. The term itself has evolved over time and can vary across cultures and languages, further adding to its complexity ¹⁸.

Recognizing Neighborhood Boundaries:

Neighborhood boundaries can be defined by a combination of factors:

a) Physical boundaries: Geographical Context: A neighborhood is inherently geographical, rooted in urban morphology ¹⁶. This includes physical elements like the built environment, land use patterns, and boundaries ¹⁶ Natural features (rivers, hills), major roads, or changes in land use can demarcate neighborhoods.

Scope

- b) Social boundaries; Social and Political Influences: Neighborhoods are also social and political products, shaped by activism and research on socio-spatial relations¹⁷. This highlights the dynamic and contested nature of neighborhood boundaries. Perceived social distinctions, cultural differences, or variations in socioeconomic status can create informal boundaries.
- c) Administrative boundaries: Official designations used by local governments for planning and administrative purposes can define neighborhood boundaries.
- Multiple Dimensions: Neighborhoods are not solely defined by physical characteristics, but also by social interactions, shared values, and access to services ¹⁶.
- e) Stakeholder Perceptions: Understanding the perceptions of different stakeholders, including residents, businesses, and local
 government, is crucial for successful urban regeneration ¹⁹. This requires effective communication and collaboration among
 all parties involved.
- f) Functional Elements: The services and amenities available to residents, such as schools, shops, healthcare facilities, and recreational opportunities, play a vital role in neighborhood life ¹⁷. Access to these resources contributes to the overall livability and well-being of the community.

Tangible vs. Intangible Aspects:

Neighborhoods are characterized by both:

- 1) Tangible aspects: Physical layout, housing types, infrastructure, and demographic characteristics.
- b) Intangible aspects: Social cohesion, sense of belonging, cultural identity, shared values, and lifestyle. ²⁰ emphasizes the importance of "intrinsic qualities" of urban form and local social processes. ²¹ discusses the role of participatory design in shaping neighborhood identity and fostering a sense of community.

Therefore, while physical attributes are important, the intangible aspects, like culture and lifestyle, are crucial in defining a neighborhood's character and contributing to its overall livability and sustainability. ²² emphasizes the importance of participatory design and social communication in understanding and shaping neighborhood dynamics.

Citation: Understanding a neighborhood's characteristics, both tangible and intangible, is essential for designing livable areas that meet the community's needs. This knowledge enables:²³¹⁷²⁴

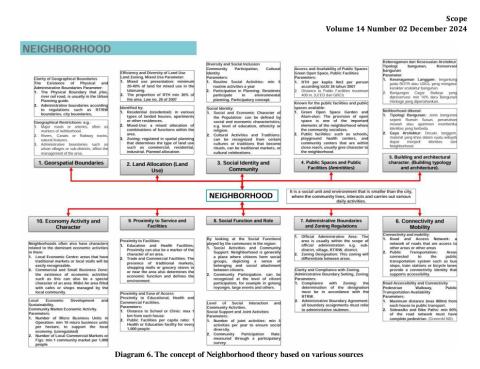
- a) Targeted Interventions: By understanding the specific challenges and opportunities within a neighborhood, interventions can be tailored to address local needs and priorities.
- b) Enhanced Livability: Considering the physical layout, social dynamics, and access to services allows for the creation of spaces that promote well-being, social interaction, and a strong sense of community.
- c) Sustainable Development: Understanding the interconnectedness of different elements within a neighborhood enables the development of sustainable solutions that balance environmental, social, and economic considerations.
- d) Community Empowerment: Engaging residents in the planning process, informed by a deep understanding of their neighborhood, empowers them to shape their environment and contribute to its long-term vitality.

Doing an assessment on a ngihbourhood need a holistic perspective, also not only the livable criteria have to be considered, but also more sustainable elements. 25 26 27 23 all these criteria need to employ to assest the neighbourhood. In this research the authors try to summerise the key aspect that need to consider to assess the neighborhood for sustainable and livable criteria.

The tangible and intangible elements that composing a neighborhood, need to breakdown and examine further to understand the neighborhood as a whole. The research highlights the importance of recognizing both physical and social aspects of a neighborhood, as they are interconnected and equally crucial in determining its overall livability and sustainability, underscoring the need for a multidimensional approach to neighborhood assessment

Neighborhoods play a crucial role in urban design and ecological systems, serving as vital units for human interaction and biodiversity. They are defined as regional segments of a city that maintain distinct characteristics influenced by social and physical dynamics. A neighborhood is a defined segment of a city characterized by its unique features and social interactions.¹⁴ Neighborhoods are essential for fostering human connections and biodiversity, highlighting the need for sustainable urban planning that integrates ecological considerations.

Neighborhood in Urban has function as a facilitate social coherence and community engagement, addressing issues like crime and environmental pollution. They enhance living conditions and promote a sense of belonging among residents. Key parameters include urban morphology, public space, and architectural specifications, which influence ecological interactions. ¹²Sustainable neighborhood regeneration focuses on improving physical and social aspects while considering environmental impacts. ⁹



1.5. Case Studies: Green Pramuka

Administratively, the location of the case study is partly RW 8 and RW 9, Rawasari Village, Cempaka Putih District, Central Jakarta, as shown in Figure 1. This area is a residential, service, and commercial zone.

II. Research Methodology

This study is included in the quantitative research method. The method of data collection through literature studies and conducting observations in the form of observations at the research location. Literature studies are conducted to obtain design concepts. The design concept consists of matrix 1, matrix 2, and analysis tables. This design concept will be tested against residential and urban areas. The case study is in Rawasari Jakarta Indonesia with an area of 30 hectares. From this area will be divided into 30 sub-areas to be analyzed. The Likert scale was chosen for its ability to standard tize subjective evaluations, providing comparability across various urban sustainability indicators.

2.1. Formulation of Design Criteria Concept

a) Concept Formulation Matrix per Criteria

Based on the results of a literature study that produces the meaning of theory, components, and attributes per criterion sustainability, regenerative, livability dan neighborhood then the next step is to make Matrix I (Formulation of Indicator Concepts per Criteria) related to the RTBL + Hamid Shirvani design component. Matrix I is produced from theoretical analysis based on the results of literature studies which are strengthened by the existence of legal aspects (regulations) and precedents (examples) of the region. The following is an example of the Matrix I table used in this study.

b) Matrix of Formulation of Sustainability, Regenerative, Livability and Neighborhood Analysis Components

Matrix II is a matrix created after formulating the concept of indicators per criteria. The results of Matrix II are the combined results of the concept of sustainability, regenerative, livability and neighborhood indicators as well as assessment parameters per design component. The final items of the resulting parameters will be assessed and a linkert scale will be made as a reference for assessment. The following is an example of the Matrix II table that has been described.

Table 1. Matrix 1: Combinati	on motricos that	translate/ovnl	in theories or		Number 02 De					
especially those th						ulcators;				
	COMPONENT OF	ANALYSIS - FO	RMULATION O	F INDICATOR (CONCEPTS PER	CRITERIA				
	(THEORY - PRESEDEN – LEGAL ASPECT)									
DESIGN COMPONENTS RTBL + HAMID SHIRVANI	SUSTAINABILITY/ REGENERATIVE/ LIVABILITY/ NEIGHBORHOOD									
-	THEORY - CONCEPT	LEGAL ASPECT	PRECEDENT	PRECEDENT	PRECEDENT	INDICATO				
Land Use Structure										
Land Use Intensity										
Building Layout										
Circulation System and Connecting Paths										
Open space and green layout										
Environmental Quality Management										
Infrastructure - Utilities										
Activity Support										
Conservation/Preservation										

Table 2. Matrix II is an explanation of how the researcher identified each indicator in the Measurable form so that both the value and the rating can be quantified.

DESIGN COMPONENTS	INDICATOR CONCEPT									
RTBL + HAMID SHIRVANI	LIVABILITY	SUSTAINABILITY	REGENERATIVE	NEIGHBORHOOD	FINAL KONSEP + PARAMETER					
Land Use Structure										
Land Use Intensity										
Building Layout										
Circulation System and Connecting Paths										
Open space and green layout										
Environmental Quality Management										
Infrastructure - Utilities										
Activity Support										
Conservation/Preservation										

2.2. Likert Analysis and Scale Table

After creating matrix II, the next step is to create an analysis table equipped with a linkert scale with points 1-5. The number of final items of the concept and parameters will be multiplied by the maximum value of the linkert point which is 5. For example, in the components of the land use structure, the final concept and parameters amount to 7 items with a maximum value of 35 points, then they are mentioned in order, namely land use intensity (maximum 90 points), building planning (maximum 35 points), circulation system and connecting paths (maximum 110 points), open space and green management (maximum 25 points), environmental quality management (maximum 15 points), Infrastructure-Utilities (maximum 30 points), Activity Support (maximum 20 points), and Conservation/Preservation (maximum 30 points). So the total linkert points is 390 points.

Table 3. The assessment table is based on the Likert scale, in each component, this table will be used on the thirty data, which is obtained from the grid distribution from the "Green Pramuka" location map that will be evaluated. The output is that the researcher gets a rating or quality score from each data or series.

		PROOF DATA		POINT LIKERT				SCORING		DATA NUMBER	
DESIGN COMPONENTS RTBL + HAMID SHIRVANI	FINAL CONCEPT + PARAMETERS			2	3	4	5	POINT (N)	SCORING (B) (N) / (TN)	POINT	DATA
Land Use Structure								35	0,0897		
Land Use Intensity								90	0,2308		
Building Design								35	0,0897		
Circulation System and Connecting Paths								110	0,2821		
Open space and green layout								25	0,0641		
Environmental Quality Management								15	0,0385		
Infrastructure - Utilities								30	0,0769		
Activity Support								20	0,0513		
Conservation/Preservation								30	0,0769		
TOTAL (TN							Ð	390	1,00		

Based on a total point of 390, a weight (B) can be made per design component of points (N) divided by total (TN). For example, in the component of the land use structure, the weight is 0.0897, meaning that the total points of the land use structure will contribute 0.0897 from the total final assessment of the area. The following is an example of the analysis table used in this study.

2.3. Location Determination, Samples and Data Collection

The analysis table that has been explained in the previous section will be used as an assessment instrument (evaluation) of the case study to determine the extent to which the area is included in the criteria of a sustainable neighborhood. The case study of this research is in the Rawasari Cempaka Putih Urban Village, Jakarta, in the form of the Green Pramuka Apartment, residential areas, commercial areas, and green areas around Green Pramuka. The boundary of the research location is as shown in Figure 8 below.



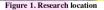




Figure 2. 30 research samples

The research site is divided into several sample areas with the assumption that the area is almost the same. The boundaries between areas are limited by imaginary lines based on road patterns or green open spaces. The divided areas are used as research samples totaling 30 samples as in Figure 9. According to 28 for correlation research, a sample of 30 respondents is required. These samples are analyzed through direct observation and assessed based on parameter items that have been equipped with a linkert scale and assessment weights. The details of the final values and weights will consist of: value weight 0-1 does not meet/suitable; value weight >1-2 less meet/suitable; value weight >2-3 quite meet/suitable; weight >3-4 already meets/suitable; and value weight >4-5 very meet/suitable. The results of the sample area assessment will be summarized and equipped with a color code. The weight value ≤ 1 is colored red, the weight value 1 to 2 is colored yellow, the weight value 2 to 3 is colored green, the weight value 3 to 4 is colored light blue, and the weight value 4 to 5 is colored dark blue.

III. Result and Discussion

- These are the steps of How the author do the assessment from each grid from the map delineating of Green Pramuka Area.
- a) The researchers divided the map into 30 grid areas, using roads as the basis for the grouping.
- b) They employed the Likert scale as a tool to conduct an assessment, evaluating how each grid area addressed the sustainable and livable criteria.
- c) After collecting data from the 30 grid areas, the researchers were able to determine the extent to which each area fulfilled the Sustainable, Regenerative, and Livable parameters that had been established.
- Using the Likert scale, the researchers also determined the scoring for each grid area, and based on this data, they were able to ascertain the ranking of each grid.
- e) The researchers then proceeded to conduct a spatial analysis to examine the distribution patterns of the data in the form of a map. Consequently, when a recapitulation was performed, a table emerged, wherein the colors representing the assessment results for each component of each grid area provided a clear picture of the Sustainable, Regenerative, and Livable suitability scales.

The data presented in the table allows us to analyze the relationship between the performance of each grid area and the overall assessment of the various elements within the neighborhood. The data presented in the table reveals that even if a grid area scores poorly in land use intensity, as indicated by a red color on the Likert scale, the overall score for that grid could still be relatively high. This is contingent on the other components, such as circulation, open space, and utility, being assessed as blue, signifying positive performance.

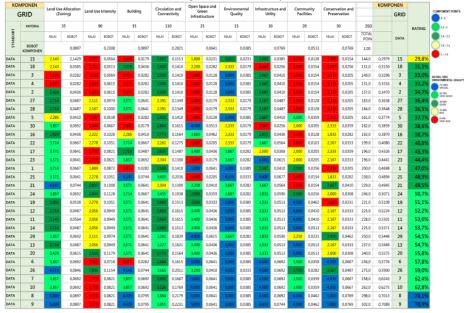
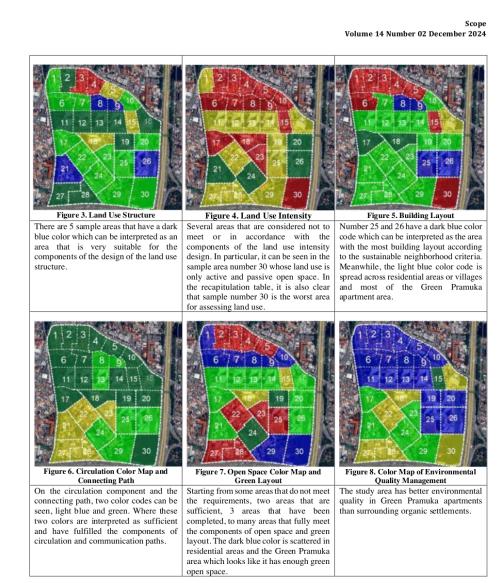
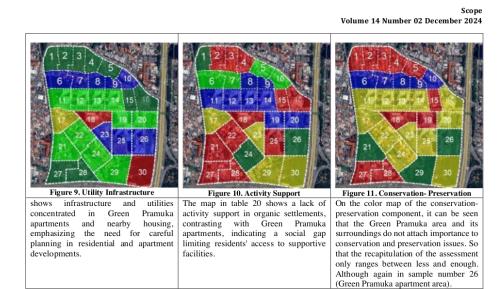


Table 4. Recapitulation Table of Analysis Results

Furthermore, the table suggests that grid areas with a red-scale assessment can be elevated to a blue-scale, indicating the potential for those areas to achieve regenerative status. However, this would require the implementation of comprehensive strategies to improve the grid performance across the evaluated criteria.





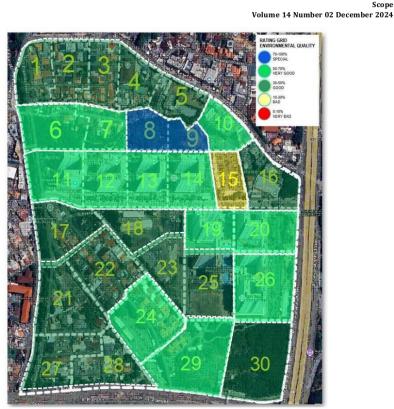
Based on the recapitulation table, the final rating of the assessment for 30 samples ranges from 0.3040 to 0.5915. Areas scoring 0.4130 to 0.5915 (green) meet sustainable neighborhood criteria, while those scoring 0.3040 to 0.3958 (yellow) do not. The final rating represents the average weight of each design component, where individual component values significantly impact the overall ranking.

The weight of each component is determined by the number of indicators and parameters it contains. A higher number of indicators increases the component's weight, affecting the final rating. However, if a component has a high weight but low Likert scale scores, the final rating will still be low. This is evident in the comparison between sample 20 and sample 20. It had more dark blue values (4) compared to sample 20 (3), yet its final rating was slightly lower. This discrepancy occurred because sample 20 had higher scores in the open space, green layout, and activity support components, increasing its final weighted value. Furthermore, the color-coded visualization of each design component provides a clear spatial representation of sustainability

Furthermore, the color-coded visualization of each design component provides a clear spatial representation of sustainability levels. The bluer an area appears, the higher its Likert score, indicating better sustainability performance. Conversely, lower-scoring areas shift towards red, signifying poorer conditions. This visual mapping enhances the assessment's clarity by illustrating spatial variations in urban sustainability quality.

Color Distribution Map Table Based on Rating per Design Component

In addition to the image of the color distribution map of each design component, the following is an image of the visualization of the distribution map of the suitability of sustainable neighborhood criteria based on the final results of the assessment rating rating. There are two types of color codes, namely green which means enough to meet the criteria and yellow which means it does not meet the criteria of a sustainable neighborhood. The green color is scattered in the Green Pranuka apartment area and several housing or villages that have open spaces. Meanwhile, the yellow color code is scattered in residential areas or villages that lack open space and are close to the main road when viewed on the existing satellite map conditions.



Scope

Figure 12. Color Distribution Map Based on Final Rating

IV. Conclusion

4.1. Key Findings

The assessment framework for this study was developed by synthesizing established global concepts of sustainability, regeneration, and livability, which were adapted to the local urban context of Jakarta. The choice of Hamid Shirvani's principles and the RTBL design components as the foundational framework was guided by their relevance to spatial design and urban planning in densely populated areas. These frameworks provide a structured approach to evaluate physical, social, and environmental dimensions comprehensively. Moreover, the Likert scoring system was selected for its simplicity and ability to standardize subjective evaluations across multiple indicators, ensuring comparability between different elements of the study. This structured yet adaptable framework ensures that the evaluation aligns with both theoretical rigor and practical application in urban design, particularly for mixed-use developments like Green Pramuka.

This study shows that the Green Pramuka area has significant potential to meet the criteria of Sustainable, Regenerative, and Livable Neighbourhood, although there are several weaknesses that need to be improved. The main advantage lies in:

- The structure of land allocation has met the principle of mixed-use zoning with the integration of residential, commercial areas, and green space.
- The building layout is relatively well planned, especially in the apartment area, so as to provide comfort and accessibility for residents.
- Adequate environmental quality management in several apartment areas with green facilities, ventilation, and good air quality.
- However, this study also identified several shortcomings, including:
- Green open space and green layout are still limited to apartment areas, while the surrounding residential areas lack adequate green space.

- Infrastructure and utilities that are not completely evenly distributed, especially in organic settlement areas that tend to be underserved.
- Uneven activity support, causing a social gap between apartment residents and residents of surrounding settlements.
- Conservation and preservation are less of a concern, both in terms of historical buildings and ecological habitat preservation.

Overall, the Green Pramuka area is at the level of "quite fulfilling" in the criteria of sustainable neighborhood, but still needs improvement efforts to achieve regenerative and fully livable status.

While the scoring results provide valuable insights into the achievement levels of various indicators, it is evident that certain elements, such as activity support and the distribution of green spaces, performed poorly in the Green Pramuka study. This underperformance can be attributed to gaps in urban design planning, such as the limited integration of community-focused facilities and uneven accessibility to public amenities. These deficiencies highlight the need to prioritize inclusivity, equitable access to resources, and the enhancement of community infrastructure in future urban developments. The lack of balance between physical infrastructure and social well-being undermines the broader goals of sustainability and livability. Policy reforms should prioritze inclusive infrastructure, equitable green space distribution, and stronger community in urban planning.

The evaluation offers numerous insights into enhancing an area's livability or even making it more regenerative. Using the provided parameters (table), designers can identify low-hanging fruit, allowing for improvements with minimal effort relative to the area's internal conditions. This approach provides urban planners with multiple options when undertaking urban renewal projects. Each component can potentially be improved to create a better-performing environment for residents. For example, if land use is poor, urban planners or designers can select components that will enhance the area within budget constraints, as cost is often a primary concern in urban revitalization efforts.

The rating system developed in this study can be easily applied to other areas to evaluate sustainability, regeneration, and livability. With an indicator, attribute and parameter-based approach, the system enables:

- Comprehensive: Combining various physical (land use structure, land use intensity) and non-physical (social quality and inclusivity) aspects.
- Adaptive: Indicators can be adjusted to the specific conditions of the region being assessed.
- Visual and Easy to Understand: The use of color recapitulation makes it easy to quickly analyze the condition of the area. The application of these ratings to other regions also provides important insights for:
 - Identify improvement priorities on specific components.
 - Comparing the level of sustainability between regions, especially in the context of urbanization in big cities such as Jakarta.

4.2. Research Implications

This study's methodology is practical for evaluating urban neighborhoods and adaptable to various socio-economic contexts. The rating system applies to mixed-use and informal areas, identifying improvement priorities. Scalability requires localized data, while replicability depends on standardized data collection and GIS integration to enhance spatial insights for urban planners and policymakers.

4.3. The Importance of Collaboration.

Achieving a regenerative region requires collaboration among the government, developers, and communities. The government ensures sustainability standards and provides incentives for regenerative development, while developers integrate sustainable, regenerative, and livable principles, balancing economic, social, and environmental benefits. Communities actively participate in planning to align designs with local needs. This synergy fosters holistic sustainability, creating an inclusive, livable, and regenerative urban environment.

4.4. Recommendations for Further Research

Future research should refine sustainability, regeneration, and livability indicators for Indonesia, assessing their relevance in local social, cultural, and economic contexts. Integrating GIS-based socio-economic mapping can improve analysis of public facility access, economic activity, and infrastructure disparities, helping identify social inequalities and guiding inclusive urban planning for more context-sensitive sustainability strategies.

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