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Sumatera



Urban Community Perception of The Importance of Sustainable Housing in Greater Tangerang, Indonesia

Wahyu Sony Ardiyansah (wahyusonyard@gmail.com), Safana Rizkika, Stirena Rossy Tamariska, Dian Sekartaji, Rendy Perdana Khidmat



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Background



Sustainable housing is a critical issue due to environmental degradation and climate change.



Success of sustainability programs depends on local governance, planning, and citizen engagement.



Understanding communities' perspectives and motivations is key for improving connections and involvement



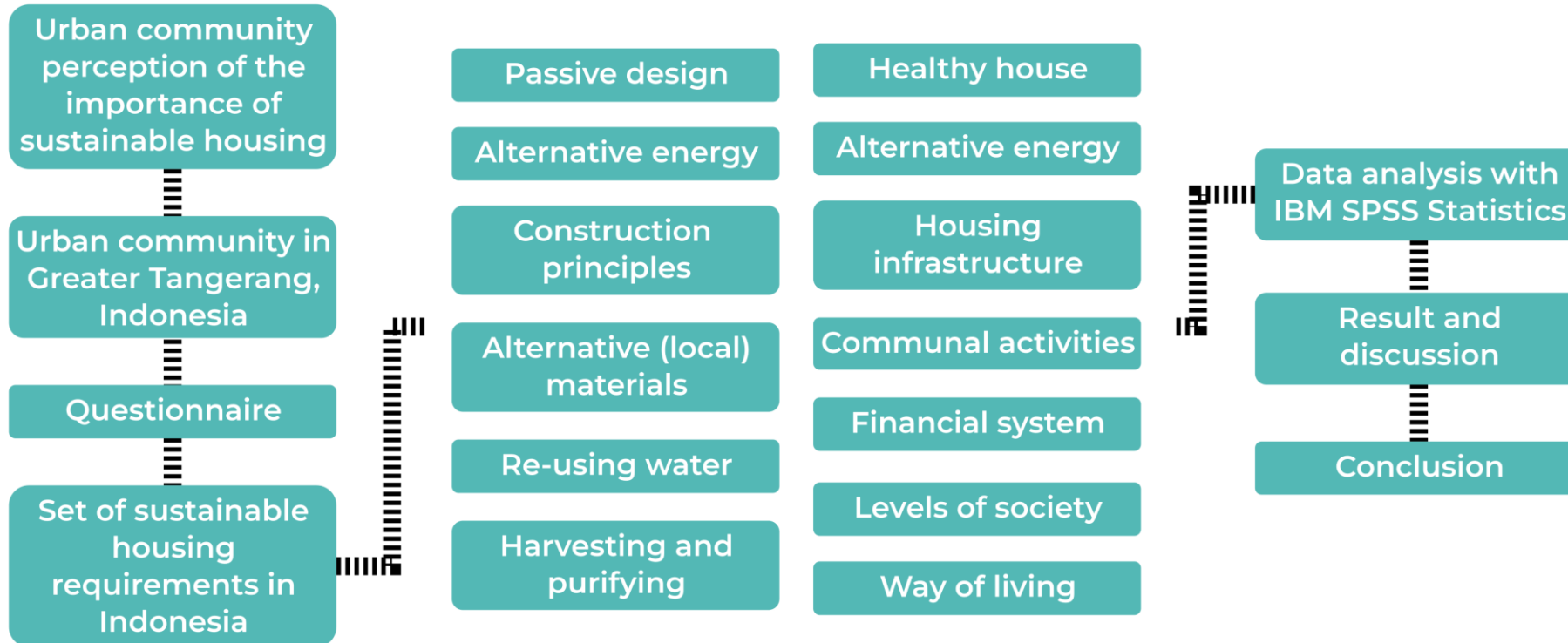
Further investigations are needed into urban communities' perceptions of sustainable housing in vulnerable and congested cities

Literature review

- Sustainable housing, defined broadly as planning for human settlements and urbanization to avoid adverse environmental effects while maximizing social, economic, and environmental benefits, can be applied across diverse contexts [1]
- In Indonesia, sustainable housing is crucial for addressing the challenges of rapid urbanization and ensuring quality housing amidst population growth [2]
- Greater Tangerang is an area that is vulnerable and there is a strong urgency for further research regarding the perception of the urban community regarding the importance of sustainable housing [3]

This research uses a quantitative approach with a descriptive survey method using a questionnaire and IBM SPSS Statistics software as analysis tools. The indicators used use a set of sustainable housing requirements in Indonesia.

Research framework



Sampling

Determining the minimum number of samples uses the Slovin formula method [4] :

$$n = \frac{N}{1 + Ne^2}$$

n = sample size
 N = population size
 e = margin of error

- Population of Tangerang Regency: 3.477.495 [5]
- Population of Tangerang City: 1.930.556 [6]
- Population of South Tangerang City: 1.354.350 [7]

Total population of Greater Tangerang: 6.762.401

The estimated minimum number of samples required with a 5% error rate for a population of 6,762,401 is approximately 400 samples.

Indicators

Based on an examination of existing conditions, the following is a compilation of sustainable housing prerequisites adapted to the Indonesian context [2]

Aspect of Sustainability	Set of requirements for Indonesian Sustainable Housing	Application questions
Energy	Passive design	Application of the use of natural light Application of a cross ventilation system
	Alternative energy	Applications for using solar panels Applications for using microhydro energy
Material	Construction principles	Application of material type selection Application of material use strategies
	Alternative (local) materials	Application of local material selection Application of utilization of nearby resources
Water	Re-using water	Application of waste water separation systems Application of waste water treatment systems
	Harvesting and purifying	Application of a rainwater harvesting system Application of a waste water filtration system
Indoor environment	Healthy house	Application of good spatial planning Application of a healthy ventilation system
Surrounding environment	Housing infrastructure	Application of good transportation networks Application of a centralized waste processing center
	Communal activities	Application of routine community service Application of environmental management training
Economic	Existing settlements	Application of renovations for uninhabitable houses Application of housing subsidies for the poor
	Financial system	Application of joint citizen savings Application of citizen financial management
Social-cultural	Levels of society	Application of communal spaces Application of social inclusive housing
	Way of living	Application of traditional architecture application of cultural expression space

Respondents characteristics

Characteristics of respondents according to the age					
%	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid					
Teenager (12-18)	75	18.8	18.8	18.8	
Young adult (19-39)	296	74.0	74.0	92.8	
Adult (40-59)	29	7.3	7.3	100.0	
Total	400	100.0	100.0		

Characteristics of respondents according to the education					
%	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid					
Junior High School	3	0.8	0.8	0.8	
Senior High School	141	35.3	35.3	36.0	
College	254	63.5	63.5	99.5	
No School	2	0.5	0.5	100.0	
Total	400	100.0	100.0		

Characteristics of respondents according to the occupation					
%	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid					
Student	291	72.8	72.8	72.8	
Private employees	69	17.3	17.3	90.0	
Government employees	5	1.3	1.3	91.3	
Entrepreneur	11	2.8	2.8	94.0	
Freelancer	8	2.0	2.0	96.0	
Housewife	12	3.0	3.0	99.0	
Unemployment	3	0.8	0.8	99.8	
Retired	1	0.3	0.3	100.0	
Total	400	100.0	100.0		

Characteristics of respondents according to the region					
%	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid					
Tangerang Regency	249	62.3	62.3	62.3	
Tangerang City	95	23.8	23.8	86.0	
South Tangerang City	56	14.0	14.0	100.0	
Total	400	100.0	100.0		

Knowledge level

Characteristics of respondents according to the age	Knowledge level	Percentage of respondents according to the age			
		Low	Medium	High	Total
Teenager (12-18)	Valid	0.0%	0.0%	0.0%	0.0%
Young adult (19-39)	Valid	28.7%	52.0%	21.3%	100.0%
Adult (40-59)	Valid	0.0%	14.3%	85.7%	100.0%
Total	Valid	22.0%	49.3%	28.8%	100.0%

Characteristics of respondents according to the education	Knowledge level	Percentage of respondents according to the education			
		Low	Medium	High	Total
Junior High School	Valid	0.0%	0.0%	0.0%	0.0%
Senior High School	Valid	66.7%	33.3%	0.0%	100.0%
College	Valid	27.7%	46.1%	26.2%	100.0%
No School	Valid	0.0%	0.0%	0.0%	0.0%
Total	Valid	22.0%	49.3%	28.8%	100.0%

Characteristics of respondents according to the occupation	Knowledge level	Percentage of respondents according to the occupation			
		Low	Medium	High	Total
Student	Valid	0.0%	0.0%	0.0%	0.0%
Private employees	Valid	22.0%	49.3%	28.8%	100.0%
Government employees	Valid	0.0%	0.0%	0.0%	0.0%
Entrepreneur	Valid	0.0%	0.0%	0.0%	0.0%
Freelancer	Valid	0.0%	0.0%	0.0%	0.0%
Housewife	Valid	0.0%	0.0%	0.0%	0.0%
Unemployment	Valid	0.0%	0.0%	0.0%	0.0%
Retired	Valid	0.0%	0.0%	0.0%	0.0%
Total	Valid	22.0%	49.3%	28.8%	100.0%

Characteristics of respondents according to the region	Knowledge level	Percentage of respondents according to the region			
		Low	Medium	High	Total
Tangerang Regency	Valid	22.0%	49.3%	28.8%	100.0%
Tangerang City	Valid	0.0%	0.0%	0.0%	0.0%
South Tangerang City	Valid	0.0%	0.0%	0.0%	0.0%
Total	Valid	22.0%	49.3%	28.8%	100.0%

Perception level (1)

Characteristics of respondents according to the age	Perception of importance level (Scale 1)	Percentage of respondents according to the age		
		Medium	Care	Total
Teenager (12-18)	Valid	0.0%	0.0%	0.0%
Young adult (19-39)	Valid	0.0%	99.7%	100.0%
Adult (40-59)	Valid	0.0%	100.0%	100.0%
Total	Valid	0.0%	99.0%	100.0%

Characteristics of respondents according to the education	Perception of importance level (Scale 1)	Percentage of respondents according to the education		
		Medium	Care	Total
Junior High School	Valid	0.0%	100.0%	100.0%
Senior High School	Valid	0.0%	100.0%	100.0%
College	Valid	7.8%	92.2%	100.0%
No School	Valid	0.0%	100.0%	100.0%
Total	Valid	0.0%	99.0%	100.0%

Characteristics of respondents according to the occupation	Perception of importance level (Scale 1)	Percentage of respondents according to the occupation		
		Medium	Care	Total
Student	Valid	0.0%	100.0%	100.0%
Private employees	Valid	4.0%	96.0%	100.0%
Government employees	Valid	0.0%	100.0%	100.0%
Entrepreneur	Valid	0.0%	100.0%	100.0%
Freelancer	Valid	0.0%	100.0%	100.0%
Housewife	Valid	0.0%	100.0%	100.0%
Unemployment	Valid	0.0%	100.0%	100.0%
Retired	Valid	0.0%	100.0%	100.0%
Total	Valid	0.0%	99.0%	100.0%

Characteristics of respondents according to the region	Perception of importance level (Scale 1)	Percentage of respondents according to the region		
		Medium	Care	Total
Tangerang Regency	Valid	0.0%	100.0%	100.0%
Tangerang City	Valid	0.0%	100.0%	100.0%
South Tangerang City	Valid	0.0%	100.0%	100.0%
Total	Valid	0.0%	100.0%	100.0%

Perception level (2)

Characteristics of respondents according to the age	Perception of importance level (Scale 2)	Percentage of respondents according to the age		
		Medium	Care	Total
Teenager (12-18)	Valid	0.0%	0.0%	0.0%
Young adult (19-39)	Valid	10.7%	89.3%	100.0%
Adult (40-59)	Valid	0.0%	100.0%	100.0%
Total	Valid	17.2%	82.8%	100.0%

Characteristics of respondents according to the education	Perception of importance level (Scale 2)	Percentage of respondents according to the education		
		Medium	Care	Total
Junior High School	Valid	0.0%	100.0%	100.0%
Senior High School	Valid	0.0%	100.0%	100.0%
College	Valid	14.2%	85.8%	100.0%
No School	Valid	0.0%	100.0%	100.0%
Total	Valid	13.0%	87.0%	100.0%

Characteristics of respondents according to the occupation	Perception of importance level (Scale 2)	Percentage of respondents according to the occupation		
		Medium	Care	Total
Student	Valid	0.0%	100.0%	100.0%
Private employees	Valid	0.0%	100.0%	100.0%
Government employees	Valid	13.0%	87.0%	100.0%
Entrepreneur	Valid	0.0%	100.0%	100.0%
Freelancer	Valid	0.0%	100.0%	100.0%
Housewife	Valid	0.0%	100.0%	100.0%
Unemployment	Valid	0.0%	100.0%	100.0%
Retired	Valid	0.0%	100.0%	100.0%
Total	Valid	0.0%	99.0%	100.0%

Characteristics of respondents according to the region	Perception of importance level (Scale 2)	Percentage of respondents according to the region		
		Medium	Care	Total
Tangerang Regency	Valid	0.0%	100.0%	100.0%
Tangerang City	Valid	0.0%	100.0%	100.0%
South Tangerang City	Valid	0.0%	100.0%	100.0%
Total	Valid	0.0%	100.0%	100.0%

Knowledge level

- 22.0% low knowledge
- 49.3% medium knowledge
- 28.8% high knowledge

The highest percentage was obtained by medium knowledge [8]

Perception level (1)

- 0.0% ignorant
- 5.0% moderate
- 95.0% care

Perception level (2)

- 0.0% ignorant
- 9.5% moderate
- 90.5% care

The educated group that dominates data collection already has good perceptions and cares about environmental problems [9]

Valuation

Item Statistics			
	Mean	Std. Deviation	N
Definition of sustainable housing	3.51	1.204	400
Benefits of sustainable housing	3.50	1.222	400
Goals of sustainable housing	3.50	1.202	400
Passive design (Application of the use of natural light)	5.29	0.788	400
Alternative energy (Applications for using solar panels)	4.41	1.009	400
Construction principles for (Application of material type selection)	5.17	0.812	400
Alternative (local) materials (Application of local material selection)	4.39	0.990	400
Re-using water (Application of waste water separation systems)	4.84	0.990	400
Harvesting and purifying (Application of a rainwater harvesting system)	4.27	1.079	400
Healthy house (Application of good spatial planning)	5.19	0.834	400
Housing infrastructure (Application of good transportation networks)	5.34	0.835	400
Communal activities (Application of routine community service)	5.20	0.897	400
Existing settlements (Application of renovations for uninhabitable houses)	4.83	0.901	400
Financial system (Application of joint citizen savings)	4.73	0.952	400
Levels of society (Application of communal spaces)	5.04	0.896	400
Way of living (Application of traditional architecture)	4.44	1.022	400
Passive design (Application of a cross ventilation system)	4.99	0.845	400
Alternative energy (Applications for using microhydro energy)	4.42	0.939	400
Construction principles (Application of material use strategies)	4.81	0.979	400
Alternative (local) materials (Application of utilization of nearby resources)	4.16	1.064	400
Re-using water (Application of waste water treatment systems)	4.77	1.015	400
Harvesting and purifying (Application of a waste water filtration system)	4.36	1.009	400
Healthy house (Application of a healthy ventilation system)	5.41	0.723	400
Housing infrastructure (Application of a centralized waste processing center)	5.24	0.829	400
Communal activities (Application of environmental management training)	4.99	0.857	400
Existing settlements (Application of housing subsidies for the poor)	5.04	0.868	400
Financial system (Application of citizen financial management)	4.70	0.952	400
Levels of society (Application of social inclusive housing)	4.21	1.098	400
Way of living (Application of cultural expression space)	4.71	0.967	400

RESULT AND DISCUSSION

- Knowledge value
- Top 3 value
- Bottom 3 value

The impact on application questions that occupy the top 3 occurs directly while it occurs indirectly in the bottom 3

This phenomenon is part of a psychological concept known as “temporal construal.” According to this concept, people tend to process information about time differently depending on how close or far an event is from the current time. In general, people tend to pay more attention to and respond to impacts felt directly than those felt indirectly or in the future. [10]

- The basic knowledge of urban communities in Greater Tangerang about sustainable housing is at a medium level. This valuation is lower than their perception of the implementation of sustainable housing indicators. There is still a need to expand information and education regarding sustainable housing development so that urban communities in Greater Tangerang can better implement sustainable housing on a complete awareness basis.
- By pairing two examples of the application of sustainable housing indicators, both still show a percentage above 90% where the urban community, which is dominated by educated groups in Greater Tangerang, already has a perception of interests that care about sustainable housing. Based on these opportunities, it is necessary to carry out a massive movement involving all stakeholders in expanding the application of the sustainable housing concept in Greater Tangerang.
- There is a need for deeper education and outreach regarding the concept of sustainable housing to urban communities in Greater Tangerang. In order to improve the views, mindset and understanding of urban communities regarding the implementation of sustainability which also important to do, but the impact cannot be felt directly.

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