LIVABILITY CONCEPT IN RUMAH SEDERHANA SEHAT BY PROCUREMENT OF INFRASTRUCTURE, FACILITIES, AND UTILITY IN KABUPATEN SIDOARJO

Kartika Dwi Paramitha, Ispurwono Soemarno, Johan Silas
Department of Architecture, Institut Teknologi Sepuluh Nopember, Indonesia
e-mail: tika_tikun@yahoo.co.id

ABSTRACT

Rumah Sederhana Sehat means adequate and affordable homes in safe and healthy environment. Its presence must be supported by public infrastructures, facilities, and utilities in sustainable manner. This study aims to ensure that the provision of infrastructures, facilities, and utilities in housing not only creates the housing feasibility, but also livability. Kabupaten Sidoarjo is selected as study sites, because it has not had regulations regarding the provision of infrastructures, facilities, and utilities in the housing yet. This study uses a livable city theoretical approach as the main reference. The study is a qualitative study, with post-positivist approach that used to assess the object of this study not only the empirical facts, but also the social life that occur within it. The method of this study is comparison case studies method. It is used to find the influence of housing and infrastructures, facilities, and utilities physical condition towards resident's psychological condition. The approach to the livable theory covers all aspects of the housing towards sustainable living. The results of this study are the livability concept of infrastructures, facilities, and utilities provision in adequate housing. Feasibility of infrastructures, facilities, and utilities on housing is not only making better neighborhoods, but also the welfare of the residents.

Keywords: livability, housing, infrastructures, facilities, utilities

ABSTRAK

Rumah Sederhana Sehat berarti rumah yang layak huni dan terjangkau di lingkungan yang sehat dan Aman. Kehadirannya harus didukung oleh infrastruktur umum, fasilitas dan utilitas dalam sikap keberlanjutan. Penelitian ini bertujuan untuk meyakinkan bahwa persediaan infrastruktur, fasilitas dan utilitas dalam perumahan tidak hanya menciptakan kemampuan dapat dibangunnya perumahan tetapi juga kemampuan untuk ditempati. Kabupaten Sidoarjo dipilih sebagai studi kasus karena belum memiliki peraturan yang berkaitan dengan penyediaan infrastruktur, fasilitas dan utilitas perumahan. Penelitian ini menggunakan pen-

dekatan teori kota yang dapat dijadikan tempat tinggal sebagai referensi utama. Merupakan penelitian kualitatif dengan pendekatan post-positif untuk mengkaji objek penelitian bukan hanya fakta empiris, tetapi juga kehidupan sosial yang terjadi di dalamnya. Metode penelitian ini membandingkan beberapa studi kasus, hal ini untuk menemukan pengaruh perumahan dan infrastuktur, fasilitas dan utilitas kondisi fisik terhadap kondisi psikologis penduduk. Pendekatan terhadap teori dapat dijadikan tempat tinggal memenuhi semua aspek dari perumahan menuju tempat tinggal yang berkelanjutan. Hasil penelitian ini berupa konsep dapat ditempatinya infrastuktur, fasilitas dan penyediaan utilitas dalam perumahan yang layak huni. Dapat dibangunnya infrastruktur, fasilitas dan utilitas perumahan bukan hanya menjadikan lingkungan sekitar yang lebih baik tetapi juga sejahtera.

Kata kunci: *dapat ditempati, perumahan, infrastruktur, fasilitas, utilitas*

INTRODUCTION

In recent years, livability is seen as one of the indicators for assessing quality of living in cities around the world. The concept of livability recently used as a challenge for many cities in order to apply it in urban development efforts. The challenge of making a city livable in such a region is to bridge the gap between formal / informal systems, rich / poor citizens, healthy / unhealthy environment, etc (Universitas Islam Indonesia, 2012).

The challenge to reach livable housing is also applied in Indonesia. One of the efforts is by providing *Rumah Sederhana Sehat*. *Rumah Sederhana Sehat* means adequate and affordable homes in safe and healthy environment. Provision of *Rumah Sederhana Sehat* is expected to meet the need for adequate and affordable housing.

Background

Now, the needs for housing for all can be achieved by adopting the concept of livability. Livability can be used as a housing concept for improving the quality of living. This research is located in *Rumah Sederhana Sehat* in Sidoarjo Regency. The problem faced in Sidoarjo is the absence of regulations on the provision of infrastructure, facilities, and utilities in housing.

Issues regarding the infrastructure, facilities and utilities faced Sidoarjo is a poor quality, difficulty in accessibility, and unavailable facilities. Those condition of the infrastructure, facilities and utilities give impact to the feasibility of housing. To solve that problem, livability should be adopted as a guideline to overcome the problem of housing infrastructure, facilities, and utilities in *Rumah Sederhana Sehat* in Sidoarjo Regency.

THEORY / RESEARCH METHODS

This research is a qualitative research with post-positivism paradigm. The method that used in this study is evaluating housing projects by paired comparison in multi method case studies (Lans, 2003). In housing research, evaluation of existing projects, is an important tool to acquire knowledge concerning user's satisfaction in relation to specific design solutions. User's appreciation of the housing situation is considered to be vital information.

In this research, evaluation housing project is used to get the facts about the housing condition and user's appreciation. In order to make an objective research, evaluation housing project takes some case studies. Some housing are compared about the housing quality based on the resident's appreciation and condition of infrastructure, facilities, and utilities. To collect data, the methods that used are observation, survey research, questionnaires, and visual record.

Determination of Population and Sample

Population in this research are *Rumah Sederhana Sehat* in Sidoarjo Regency. This research will be done in three housing that located in Candi District, Sidoarjo Regency. Those housing studies are divided into three categories, i.a.: housing that the infrastructure, facilities, and utilities has been completely handed over to the Government, housing that the infrastructure, facilities, and utilities is still in the process of submission to the Government, housing that the infrastructure, facilities, and utilities has not been submitted to the Government yet.

The sampling technique that used is simple random sample. It is used in order to get objective results. a simple random sample is a subset of individuals (a sample) chosen from a larger set (a population). Each individual is chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process (Yates, 2008).

Choosing a Sample Size

There are several ways to choose a sample size. In this research, choosing a sample size using the Slovin formula for calculating. The formula is (Slovin, 1990):

$$n = \frac{N}{1 + N(e)^2}$$

where:
n is the sample size: the number of people interviewed.
N is the whole of population: the number of people population
e is error rate: the percentage of error level value

Value of the error rate in the study by 10%, indicating the level of confidence of 90%. Candi District are chosen for the population. The population of the Candi District in 2009, was 135,434 people (BPS Kabupaten Sidoarjo 2009 in RP4D Kabupaten Sidoarjo Tahun 2010-2020, 2010). From these data, it can be calculated the number of samples in this research.

$$n = \frac{135.434}{1 + 135.434 \, (0,1)^2} = \frac{135.434}{1.355,34} = 99,93 \approx 100 \text{ samples}$$

Those samples will be divided in three housing based on the number of population in each housing. The calculation are shown in the table below.

Table 1. The Division of Research Sample

No	Name of Housing	Number of Units	Calculation	Sample Size
1	A	783	(783/2257) * 100	35
2	B	603	(603/2257) * 100	27
3	C	871	(871/2257) * 100	38
	Total	2257		100

Source: writer, 2012

Note: The numbers of units in each housing are based on data from Sidoarjo Governance.

RESULTS AND DISCUSSION

The discussion is divided into two steps. First step is analyzing the result of interview and questionnaires to the population. After analyzing the result, the lack of the existing condition in each housing resolved by livability concept and also standard of the infrastructure, facilities, and utilities. Second step is analyzing the livability theory that can be applied in the housing by procurement of infrastructure, facilities, and utilities.

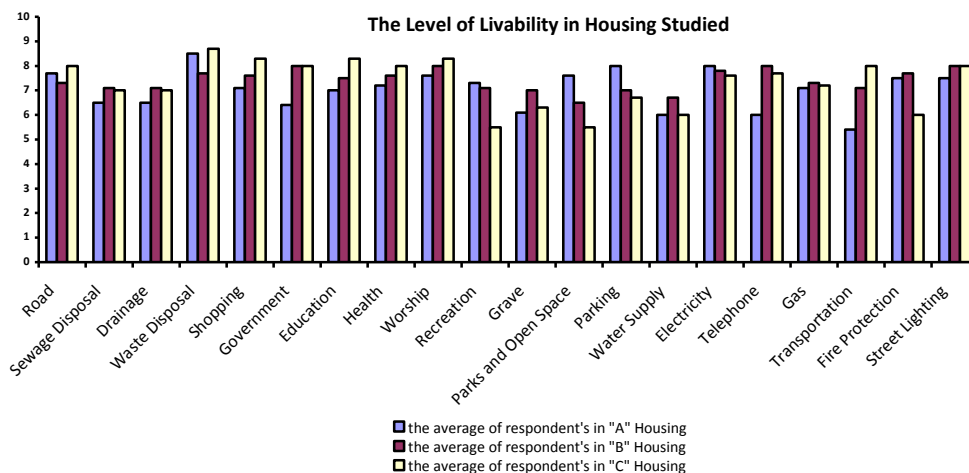**The Result of Interview and Questionnaires to the Population**

Figure 1. The Level of Livability in Housing Studied
Source: questionnaires

\Questionnaire is conducted to determine the level of livability in housing studied. The level of housing livability is measured from resident's satisfaction of the infrastructure, facilities, and utilities that are available in their housing. Interview is use to know the reason of their satisfaction of the infrastructure, facilities, and utilities. Figure 1 shows the level of resident's satisfaction toward the infrastructure, facilities, and utilities in their housing. The common problems that happened in those housing studied are sewage disposal, drainage, parks and open spaces, and water supply. Those problems are not happen in each house, because the condition in each house / area is different.The problem of sewage disposal and drainage that available in those housing should be analyzed or evaluated to determine its adequacy in terms of the following existing. The problem can be caused by the connection, capacity, or control operation. The impact of bad sewage disposal and drainage can cause floods in rainy season.

Parks and open spaces are important to improve the quality of housing. The problem in those housing is the lack of green areas. Parks and open spaces that available in each housing is not used properly. It can be caused by the poor condition. Lack of plant and vegetation, beside that, some open spaces are not maintained. In the case of water supply, the problem can be caused by the connection, capacity, quality, or control operation. In the "A" and "B" housing, the water supply from the Government (PDAM) has not available yet. The residents get the clean water from water wells and buying the Prigen water from the seller. The quality of water well in each housing is not in the same condition. The poor quality of water well makes the residents should buy more Prigen water. The subdivision regulations have stated that Government is working to set up the water supply connection to those villages. In the "C" housing, water supply (PDAM) has been available. Unfortunately, not all house have good quality of water supply. It is caused by the different water sources. Residents who get poor quality forced to buy Prigen water.

The Solutions of Housing Problems

This part discussing about the solution of those problems. The solutions are directed to livability concept in order to improve the quality of life. First common problem is about the sewage and drainage system. Some things to note acording livability concept are management of human sewage and household waste must meet health requirements, drainage should not be a disease vector breeding places, and good connections within the water flows (Timmer, 2006).

Second problem is the quality of parks and open spaces. Park and open space are important public spaces to stimulate face-to-face interaction, collectively celebrate and mourn, encourage civic participation, admire public art, and gather for public events. So that public places should be well-defined, because dwellers need welcoming. Improving the quality of communication can improve the quality of life.

Beside the quality, the variety in housing is also important. People want variety in housing, shopping, recreation, transportation, and employment. Variety creates lively neighborhoods and accommodates residents in different stages of their lives (Vanderslice, 2005). Accessibility to green space and parks for recreation is an important aspect of the livability of a region, as is the goods and services that natural systems provide such as clean air, water, and food for a city's residents.

Third problem is about water supply. A livable city is connected through the flow of resources that sustain its activities including water, materials, sewage, and waste (Timmer, 2006). Accessibility to get clean water is important for daily activities. For that reason, the availability of water resources should produces enough water all the time with water quality that meets the health requirements. Residents who get poor quality forced to buy Prigen water.

The Livability Theory for Housing by Procurement of Infrastructure, Facilities, and Utilities

Table 2. The Connection between Livability Concept and Infrastructure, Facilities, Utilities

No	Livability Concept		Infrastructure Facilities Utilities
1	Natural heritage as collective memory.	●	Road
			Sewage Disposal
2	Historical heritage and identity.	●	Drainage
3	Value local knowledge and culture.	●	Waste Disposal
			Shopping
4	Cultural and technological rootedness.	●	Government and Public Services
5	Sense of place, belonging & pride.	●	Education
			Health
6	Connection people & people/land.	●	Worship
			Recreation
7	Equitable access to resources	●	Grave
8	Right to public goods & services.	●	Parks and Open Spaces
			Parking
9	Social participation.	●	Water Supply
10	Cooperation and tolerance between citizens with different values and beliefs.	●	Electricity
			Telephone
			Gas
11	Security & safety.	●	Transportation
12	Economic diversity to reduce dependence on one economic model, job creation, as well as entrepreneurship.	●	Fire Protection
			Street Lighting

Source: writer, 2012
Note: The livability concept are based on data from livable cities (Narang, 2011).

Livability is defined as quality of life as experienced by the residents. This part discussing about the livabe theory that can be applied in housing. The livable theory discussion focused on infrastructure, facilities, and utilities. It is according to the research goal, that the quality of life can also be achieved by procurement of infrastructure, facilities, and utilities.

The theory is taken from the theory of livable cities think tank from Philips Center for Health and Well-Being. The Livable Cities think tank has identified three important and interlinked ingredients to guide successful urban transformation:

Authenticity, Inclusion, and Resilience (AIR). All three ingredients can be linked to both the environmental and the socio-economic/ technology sphere (Narang, 2011).

The concept of livable city are shown in Table 2. In the table below, most of the livability concept can be achieved by procurement of infrastructure, facilities, and utilities. There are two concepts than haven't achieved yet. Those are historical heritage and identity and sense of place, belonging, and pride.

The housing identity is shown the authenticity in each housing. An authentic housing can create a sense of pride and belonging. It can be achieved by procurement of facilities that can be built or planned by the residents. The social participation is important, in order to know the facilities that they need in their housing.

In addition to those two concepts, other concepts that have been achieved should be considered. The quality of infrastructure, facilities, utilities have to be improved. With the addition and improving the quality of infrastructure, facilities, and utilities, the livability in housing will be achieved.

CONCLUSIONS

From the result of interview and questionnaires to the population, can be concluded about livability level in those housing. According to the population, the level of livability in each housing is still feasible. In terms of health and safety, housing can be classified as safe.

While it can be classified as feasible, but in fact, there are still found some shortcomings in implementation. The problems in each housing are evaluated and made the solution. Some livablity concept that haven't achieved by procurement of infrastructure, facilities, and utilities have to be improved. Those solutions are directed to the research goal, livability concept in Rumah Sederhana Sehat based on procurement of infrastructure, facilities, and utilities.

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