Community Resilience and Sustainability Levels of Thematic Kampong in Malang City

Rizky Amanda Vidianti
Graduate student,Urban and Regional Planning Department
Brawijaya University
Malang, Indonesia
rizky.amanda.vidianti@gmail.com

Surjono
Lecturer of Urban and Regional Planning Department
Brawijaya University
Malang, Indonesia
surjono@ub.ac.id
https://orcid.org/0000-0002-3024-5397

Gunawan Prayitno
Lecturer of Urban and Regional Planning Department
Brawijaya University
Malang, Indonesia
gunawan_p@ub.ac.id

Heru Nurwarsito
Lecturer of Informatics Engineering Department
Brawijaya University
Malang, Indonesia
heru@ub.ac.id

***Abstract*— A new concept has emerged in urban upgrading form, i.e., thematic Kampong. This is a creative effort to develop community involvement in improving the quality of settlement. In 2016, the Government of Malang City has organized Malang Design Festival or Thematic Kampong Competition event. Thematic Kampong Competition was aimed at encouraging communities to be proactively create and promote the creation of sustainable distinctive kampong images and activities. The sustainability of a thematic kampong is influenced by the resilience of its community and is assessed from the performance of five assets of livelihood. The five assets are financial, social, human, natural, and physical assets. Therefore, it is necessary to measure community resilience and livelihood assets performance before and after the development of thematic kampongs in Malang. We used structural equation modeling (SEM) to analyze the relationship among variables simultaneously and livelihood asset analysis to measure the sustainability of thematic kampongs in Malang City. The analysis resulted that there are three most important aspects that affect the community resilience of the thematic kampongs, i.e., technological; physical; and social aspects**

Keywords—community resilience, sustainability-thematic-kampong, livelihood-assets

I. INTRODUCTION

Settlement is part of a residential environment consisting of more than one housing unit that provides infrastructures, facilities, public utilities, and has other supporting functions in urban or rural areas. Settlements can also be defined as housing or a collection of dwellings in which there are interrelated activities [1]. Over time, a new concept has emerged in the development of settlements, that is a thematic villages or kampong. The concept of thematic kampong is more about encouraging kampong societies to be proactively involved in developing their kampongs, so that it is not only community-based but also the creation of distinctively characterized kampongs place making that are sustainable [2]. The themes were the creative ideas of the community supported by academics. Thematic kampongs can also be called a social innovation [3]. One form of prerequisites in the successful development of settlements (for example thematic kampongs) is community resilience which has become a dominant strategic theme and an operational objective in national resilience policy. Many countries in the world face big problems in their society, with various threats emanating from dynamics in social, economic, and political life as well as natural changes. Community resilience is how the community itself develops and maintains its well-being, partnering with communities around the site with the aim for the entire area/district to be sustainable. The quality of a sustainable settlement is measured from the performance and development of five assets. This study was intended to determine significant community resilience variables and level of sustainability in the development of thematic kampongs in Malang, with cases in Heritage Kampong, Blimbing *Jahe* (ginger) Kampong, *Terapi* (therapy) Kampong, Glintung Culture Kampong, and *Bibit* (seedlings) Kampong.

II. MATERIALS AND METHOD

Longstaff, et al [4] explained the community resilience is how the community itself develops and maintains its well-being, partnering with the community around the location and interest in the goal for the entire city to be sustainable. According to Schwind [5] a resilience community is a community that has fulfilled all of its human rights in matters of food, housing, education, health, social services, and employment opportunities. The basic concept of sustainability according to Sabaruddin [6] is development with improvements in three aspects, namely social, economic, and environmental. The social aspect is all matters relating to humans and values, social interaction, and social institutions. The economic aspect has a focus on the allocation and distribution of resources. Environmental aspects are all matters related to the contribution between social and economic, as well as the influence of contributions and resources. The quality of a city or a sustainable settlement is based on the preservation and development of five assets. These assets are: [7]

1. Financial assets;
2. Social asset;
3. Human assets;
4. Natural assets; and
5. Physical assets.

The analysis technique used in this research is Structural Equation Modeling (SEM). This is because there is a relationship between variables that occur simultaneously. SEM is a multivariate analysis technique that combines aspects of factor analysis and multiple regression analysis so that it allows researchers to examine a series of dependent relationships between measurable variables and latent constructs [8]. To solve the structural equation model, the Partial Least Square (PLS) computer program (SmartPLS 3.0 Program) is used. Quantitative analysis using structural equation models (Structural Equation Modeling / SEM) is based on variants or components, namely PLS (Partial Least Square), to verify the relationship between variables. PLS is a powerful analytical method tool because it uses a free distribution approach so there is no need to assume certain distributed data and may use a small sample size (Ghozali, 2015). For structural models, the initial assumption that is that community resilience is influenced by 8 following aspects, namely: 1) economic aspects, ; 2) social aspects, ; 3) cultural aspects, ; 4) ecological aspects, ; 5) physical aspects, ; 6) aspects of human resource aspectss, 7) political aspects; and 8) technological aspects. While to know assess the level of sustainability of thematic kampongs, namely we used Livelihood assets analysis asset or pentagon assets analysis. Pentagon asset analysis will be used to assess the sustainability of settlements in thematic villages

III. RESULT AND DISCUSSION

A. Overview of the Thematic Kampong In Malang City

a) Kampong Heritage Kajoetangan

Heritage Kampong began as a tourist destination since 2018. The Heritage Kampoeng destinations in Kajoetangan area are: heritage (colonial era) houses, Mbah Honggo's grave site, spots for instagramable photos, and antique galleries. The tourist attraction in Kajoetangan Heritage Kampoeng is the form of its architecture which includes historic local houses and colonial architecture. People may observe old equipments that are displayed in heritage houses such as bicycle, cookwares, lights, windows, cameras, telephones and other old home furnishings. Tourists can find out how the history of Kajoetangan and even the city of Malang was developed by visiting Kajoetangan Heritage Kampoeng, and the cultural values and community life that existed in Kajoetangan in the past.

b) Terapi (therapy) Kampong

Terapi Kampong is a kampong that located in one of the districts in Malang, namely Sukun District, precisely in *Rukun Warga* (neighbourhood cluster) 03. Based on the survey, Terapi Kampong is aimed to become a green kampong with the attractions are a stone therapy (stone therapy paths that are installed along the front of the residents' houses), composter (the best quality of composters throughout the city, odorless and produce good compost), biofil (tools that filter waste water so that the output is in the form of liquid that can be drained into rivers or other waterways), Garbage Banks and Routine Sorting Routine (Citizens' activities in the selection of rubbish, dry rubbish to be s`old in garbage banks while wet rubbish is for composter).

c) Bibit Kampong

The area of the Bibit Kampong is located in the Lowokwaru District precisely in RW 03. The Bibit Kampong is divided into 5 *Rukun Tetangga* (neighborhood units) or RT. The potential of this kampong is the development of organic agriculture such as the business of planting ready-to-grow vegetables, cultivating organic vegetables and catfish farming. Over time, a farmer group was formed with the name "Lotigama" which stands for "Lowokwaru Tiga Malang". Bibit Kampung started to develop since april 2014 Bibit Kampung has a vision of "Realizing Bibit Kampung as a Sustainable Area with a Prospects for Tourism Kampong Development"

d) Jahe (ginger) Kampong

Jahe Kampong area is a thematic kampong located in RW 07 of Blimbing District with the focus of development in cultivating of Red Ginger. Jahe Kampung has developed ginger farming as its particular urban farming. The development of urban farming was chosen to overcome the limitations of land, because urban farming can utilize space on the back or front yard and other building elements with verticultural gardens. There is a regular schedule that is carried out by the ginger farmers group.

e) Glintung Kultur (culture) Kampong

Glintung Kultur Kampong area was just developed in 2019, before recognized as Glintung Kultur, this kampong was better known as 3G (Glintung Go Green) Kampong or . The development of Glintung Kultur Kampong aims to increase community productivity by using community development methods that are participatory and integrated with all its developing assets and potentials. The focus of the theme was cultural arts activities, one of which was the art of mask dance culture. In the last few months, the dance is taught every Sunday. Besides dancing training, the children began to learn how to make *Malangan* masks. Glintung Kultur Kampong packed itself as "eco culture kampong". The hope is that this kampong can become a model for other kampongs in urban areas

B. ANALYSIS

a) Partial Least Square Analysis

To find out what factors influence community resilience in thematic kampongs in Malang, Partial Least Square Analysis was used. In the first stage an initial evaluation of a hypothetical structural model for thematic kampongs in Malang City was prepared. The model is arranged in 2 parts, namely:

- Structural model (inner model) is a structural model that connects between latent variables.
- Measurement Model (outer Model) is a measurement model that connects indicators with their latent variables

TABLE 1 OUTER MODEL OF THEMATIC KAMPONG IN MALANG

Result	Validity		Reliability	
	Cronbach Alpha **(> 0,7)**	**RHO_A**	***Composite Reliability*** **(> 0,7)**	**AVE (> 0,5)**
Community resilience				
Technology	0,937	0,938	0,96	0,888
Availability	1,00	1,00	1,00	1,00
Accessibility	1,00	1,00	1,00	1,00
Acceptability	1,00	1,00	1,00	1,00
Social	0,832	0,832	0,922	0,856
Social organization	1,00	1,00	1,00	1,00
Connectedness	1,00	1,00	1,00	1,00
Political	**0.132**	**0.280**	**0,407**	**0,259**
Aspiration	**0,55**	1,409	0,767	0,638
Program	**0,008**	**0,267**	**0,587**	0,507
Physic	0.815	0.882	0.874	0.562
Physical facilities integration	1,00	1,00	1,00	1,00
Physical facilities	0.876	0.882	0.91	0.671
Economy	0.789	0.792	0,876	0,703
Welfare	0,707	0,707	0,872	0,773
Financial institutions	1,00	1,00	1,00	1,00
Culture	**0.45**	**0.460**	0.730	**0.476**
Cultural activity	**0,378**	**0,388**	0,761	0,615
Key person	1,00	1,00	1,00	1,00
Human resource	0,702	0,702	0,870	0,771
Skill	1,00	1,00	1,00	1,00
Creativity	1,00	1,00	1,00	1,00
Ecology	**0,293**	**0,676**	**0,356**	**0,392**
Settlement infrastructure	0.161	0.384	0.404	0.428
Green open space	0,521	0,432	0,107	0,591

Next, an analysis of the structural model (inner model) is then carried out at the initial testing of the thematic kampong model with a significance level of 5%.

Based on table 2, the order of the most dominant aspects shaping the resilience of the thematic kampong communities in Malang City are as follows:

1. Technological aspects
2. Physical aspects
3. Social aspects
4. Ecological aspects
5. Economic aspects
6. Cultural Aspects
7. Political Aspects
8. Human Resources aspects.

TABLE 2 R SQUARE TEST

Test	R square	explanation
Community resilience		
Technology	0,904	Strong
Availability	0,921	Strong
Accessibility	0,914	Strong
Acceptbility	0,829	Strong
Social	0,862	Strong
Social organization	0,852	Strong
Connectedness	0,860	Strong
Political	0,616	Moderate
Aspiration	0,052	Low
Program	0,996	Strong
Physic	0,868	Strong
Physical facilities integration	0,035	Low
Physical facilities	0,961	Strong
Economy	0,768	Strong
Welfare	0,891	Strong
Financial institutions	0,730	Strong
Culture	0,700	Strong
Cultural activity	0,738	Strong
Keyperson	0,523	Moderate
Human resources	0,376	Moderate
Skill	0,769	Strong
Creativity	0,772	Strong
Ecology	0,738	Strong
Settlement infrastructure	0,815	Strong
Green open space	0,784	Strong

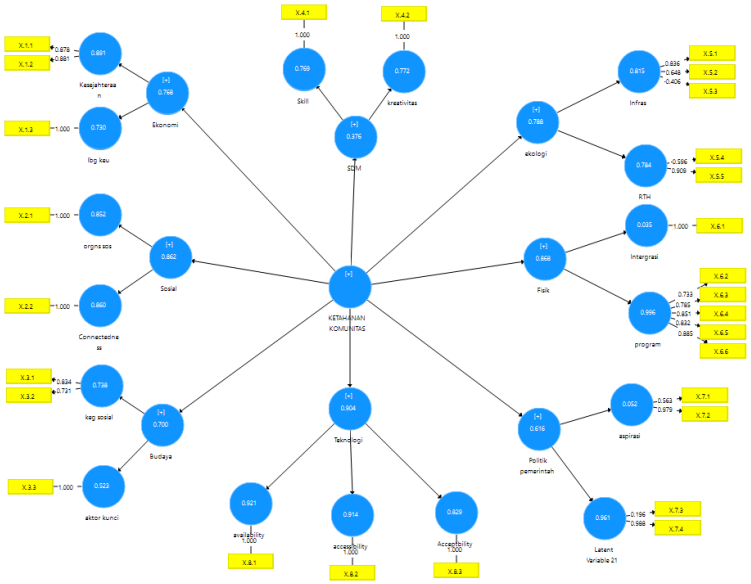

Fig 1. Initial Evaluation Results of the Measurement Model (Outer Model) for the Thematic Kampong Model in Malang

Fig. 1 shows that all of 8 aspects have a positive relationship into community resilience. The strongest correlation is Technological Aspects with the value is 0.904. This corresponds to the statement from the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP, 2016) which says Communication Information Technology (ICT) has an important role and become an integrated part in almost every aspect of life [10].

b) Livelihood asset analysis

A sustainable livelihood can happen when it is managed or enhanced both local and global assets on which a livelihood is dependent. It also provides benefits for other livelihoods. In determining the condition of the sustainability in Thematic thematic villagekampongs, its analysis the level of sustainability of livelihood assets is performed. Livelihood Assets assets have five identifiable aspects / five aspects suchi.e., as human assets; financial assets; natural assets; physical assets; and social assets. Based on the results of a questionnaire survey using questionnaires that had been submitted interviewed to residents, each aspect has different results. The results of the average calculation of the assessment of each aspect can be presented in the form of a pentagon diagram or pentagon assets. The form of integration between the assets will determine how the relationships are created in each asset. It can be identified that the value of each asset is better since specific themes were assigned for each villagekampongs. This can be interpreted that the theme of the villagekampongs have a positive impact on the improvement of 5 assets in settlements

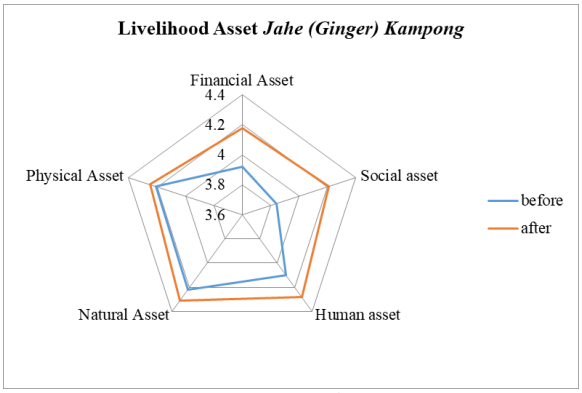

Fig 2. Livelihood assets of Jahe Kampong

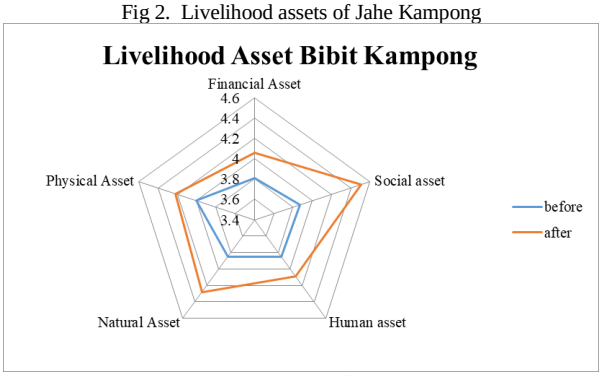

Fig 3. Livelihood assets of Bibit Kampong

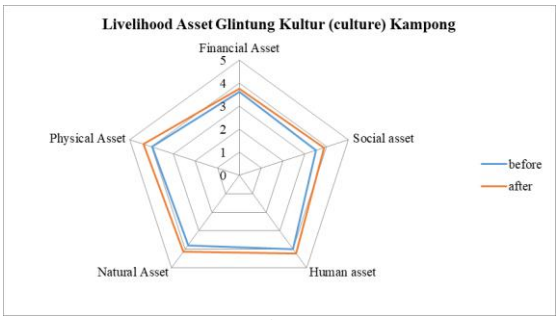

Fig 4. Livelihood asset of Glintung *Kultur* Kampong

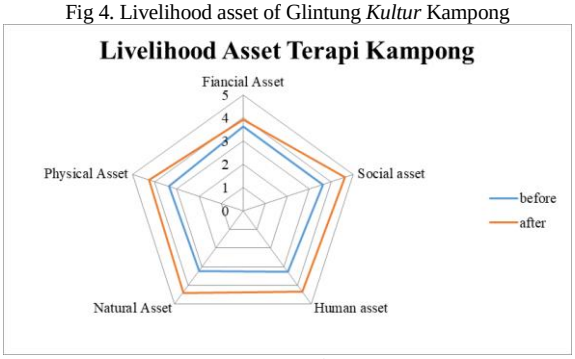

Fig 5. Livelihood assets of Terapi Kampong

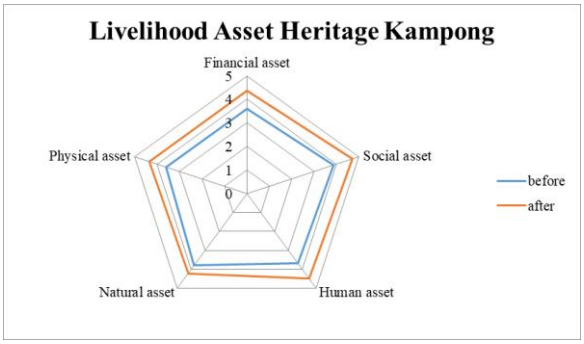

Fig 6. Livelihood assets of Heritage Kampong

The most positive impacts can be described as follows: In Jahe Kampong, the highest value after the development of a thematic kampong is natural assets; for the Bibit Kampong, Terapi Kampong and Heritage Kampong are from Social Assets; The highest asset in Glintung Culture Kampong is Physical assets

IV. CONCLUSIONS

a) Eight aspects of the research have significant relationships to community resilience of Thematic kampongs in Malang City, the sequence of the most dominant aspects shaping the resilience communities in thematic kampong Malang are as follows:

1. Technological aspects
2. Physical aspects
3. Social aspects
4. Ecological aspects
5. Economic aspects
6. Cultural aspects
7. Political aspects
8. Human resources aspects

b) thematic kampongs analyzed with livelihood assets analysis. Livelihood Assets have five identifiable aspects

which are human assets;financial assets; natural assets;physical assets;and social assets. In these 5 kampongs, they shows that the condition are improving in a better way. In Jahe Kampong, the asset that is improved most is natural assets. For the Bibit Kampong, Terapi Kampong and Heritage Kampong, they have similar asset that is most developed, i.e.: social assets. The highest asset in Glintung Culture Kampong is physical assets.

For further research that may be conducted, we recommend to:

1. Conduct research on aspects of community resilience by focusing more on indicators from aspects of human resources, political and government aspects, as well as Culture aspects.
2. Conduct more in-depth research on technological aspects and physical aspects and social aspects as the most dominant aspects forming community resilience.
3. Conduct more in-depth research on the relationship between community resilience and kampong sustainability conditions

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