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The Factors that Influence the Development of Slums in Tallo, Makassar

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Abstract*: Tallo Urban Village which is one of the villages in Tallo District with a high population density, Tallo Urban Village has conditions that are categorized as slums on water based on Makassar Mayor Decree No.050.05 / 1341 / KEP / IX / 2014. There are 6 Subdistricts in Makassar City that are designated as slums especially Tallo Urban Village so that the problem in this study can be formulated regarding various factors that led to the development of slums in Tallo Urban District of Makassar. The purpose of this study is to identify the cause of the development of slums in Tallo Urban Village, Makassar City. In this study, the slums are characterized by physical areas (building management, water supply, wastewater management, drainage facilities, and environmental roads), non-physical areas (ownership of land rights, population density). The research variables we use in this study are Slums; Population density; Width of the Road Environment; Drainage Conditions; Waste Water Management; Clean water supply; Building Layout; and Building Status. In this study, the data collection techniques used were Multi-Stage Sampling, namely: area sampling technique; proportional sampling technique; and simple random sampling. The analytical approach used in this research is to use a quantitative approach, using the Chi-Square method. The results of this study found that the cause of the development of slums in the Tallo District of Makassar City was population growth that continued to increase each year. This shows that the allotment of land functions in Tallo Kelurahan, besides functioning as a settlement function, many also function as warehousing, so that Tallo Kelurahan is classified as moderate density, with population growth increasing every year.

Key Words: Slums, Revitalization, Population

I. INTRODUCTION

Revitalization is an effort to revitalize an area that was once vital/alive but then experienced a decline or degradation. Symptoms of a decrease in physical quality can be easily observed in historical or old areas. Since they are part of the journey of history (the centre of economic and socio-cultural activities), they are generally under pressure or influence of development and are even used to meet the need for living space. Therefore, a process of revitalizing an area is focused on the physical and non-physical aspects of the environment and space.

This action tries to find out the extent of the role of physical intervention in the Revitalization of slum areas in the city of Makassar.

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The image of the slums is closely related to visual conditions, especially in creating the right space.

To support the process of Revitalization, in this physical intervention there is a need to establish several issues that are emphasized in this discussion, namely the revitalization strategy seen from physical and non-physical issues of the environment.

Regional Revitalization according to the Department of Settlements and Regional Infrastructure is a series of efforts to revive areas that tend to die, enhance strategic and significant vitality values from areas that still have the potential and/or control areas that tend to be chaotic. Regional Revitalization is carried out through the development of specific areas that are feasible to be revitalized in terms of regional settings (buildings and regional space), environmental quality and regional utilities.

Revitalization in principle is not only related to the issue of conservation of buildings and historical space, but also an effort to restore or revive areas that have been degraded or control and increase the value of areas that are developing very rapidly but the conditions tend to be out of control. Symptoms of a decrease in physical quality can be easily observed in areas where development tends to be sporadic, and/or with patterns (deviant, random, and clustered).

In general, revitalization activities only focus on controlling open residential areas caused by the activities in those areas. The loss of initial vitality in a residential area, which is characterized by less controlled development and regional development results in the destruction of the area, both in self-destruction and creative destruction (Danisworo, 2000)[1]. The urgency of Revitalization can be measured based on the level of slums of the area, through the physical parameters of the area (building layout, water supply, wastewater management, drainage facilities, and environmental roads), and non-physical parameters (land ownership, population density).

The same goes for Tallo Village, which is one of Urban Villages in Tallo Sub-district, which is one of the largest sub-districts in Makassar City, and this indicates a high population density. Therefore, it is not surprising if Tallo Urban Village has settlements whose conditions can be categorized as slums according to the parameters described above. Based on Decree Of Makassar Mayor No. 050.05/1341/KEP/IX/2014 concerning determination of slum settlements, there are six sub-districts designated as slum settlements, but in Tallo Sub-District especially Tallo Urban Village is not included so this also becomes the reason in assigning Tallo Urban Village as the research location (Pusvir TRP, 2014)[2].

Tallo Sub-district, concerning Neighborhood Association (RT) and Community Association (RW) of 2015-2034, is designated as Medium and High-Level Settlements and as an industrial space so that it is natural that Tallo Subdistrict,

especially Tallo Urban Village, is a slum settlement physically and non-physically.

A. Problem Statement

Based on the background above, the formulation of the research problem is "What are the factors causing the development of slums in the Tallo Urban Village in Makassar City?"

B. Research Objective

The objective of this research is to identify the causes of the development of slums in Tallo Urban Village, Makassar City.

C. Research Scope

The scope of this research includes an area, namely Tallo Urban Village, Tallo Sub-district, Makassar City. The main factors causing the development of Slum Settlements are (1) Population density; (2) The width of the environmental road; (3) Drainage Conditions; (4) Waste Water Management; (5) Clean water supply; (6) Building Layout; (7) Building Status.

II. LITERATURE REVIEW

According to (Sinulingga, 2005)[3], the characteristics of slum settlements include physical conditions (building layout, clean water supply, wastewater management, drainage facilities, and environmental roads) and nonphysical conditions (ownership of land, population density).

III. RESEARCH METHOD

This research was conducted in the administrative area of Tallo Urban Village, Tallo Sub-District, Makassar City, more precisely in the slum area.

Research time is the time limit used in conducting research. This research, aiming to find out the main factors causing the development of the Tallo Urban Village slums in Makassar City, was conducted from October 25, 2018, to January 1, 2019.

The data collection techniques used are Multi-Stage Sampling, namely: (1) Area sampling technique; (2) Proportional sampling technique; (3) Simple random sampling.

The research variables that we use are based on (Sinulingga, 2005, p. 83)[3], namely slum settlement, population density, environmental road width, drainage conditions, wastewater management, clean water supply, building layout, building status. The analysis method used in this study is the Chi-Square analysis.

To answer the formulation of the problem, namely knowing the factors of the emergence of slums in Tallo Village, Makassar, using Chi-Square Analysis, namely:

$$X^2 = \sum \frac{(fo - fh)^2}{fh}$$

Information:

X^2 = Chi-Squared

f_o = Observation Frequency

f_h = Expectation Frequency

To added the expected frequency, a formula is used:

$$fh = \frac{n_{io} - n_{oj}}{N}$$

Where:

f_h = Expected frequency

n_{io} = Number of Row Values

n_{oj} = Number of Column Values

N = Number of Samples

Conclusions can be drawn if the following conditions are reached namely: X^2 count < X^2 table which means H_0 is accepted, conversely if X^2 count > X^2 table means H_0 is rejected.

To find out the coefficient of variable X against variable Y based on the results obtained, use a contingency test, namely:

$$c = \sqrt{\frac{x^2}{(n + x^2)}}$$

Where:

C = Contingency Coefficient Results

X^2 = Chi-Square results calculated

n = Number of Samples

To find out the magnitude of the relationship between the variables X and Y, we use the benchmark inter-percentage (Likert Scale) with the percentage value used can be seen in the Table I below:

Table-I: Likert Scale Value

Likert Scale	Relationship
0,00 – 0,19	Relationships are very weak
0,20 – 0,39	Weak relationship
0,40 – 0,59	Moderate relationship
0,60 – 0,79	Strong relationship
0,80 – 1,00	The relationship is very strong

IV. RESULTS AND DISCUSSION

A. Results

- **Slum Settlements:**

Tallo Urban Village is one of the urban villages in the city of Makassar with an area of 46.08 hectares and a slum area of ± 14 hectares, for more details, see the following map Administrative Map

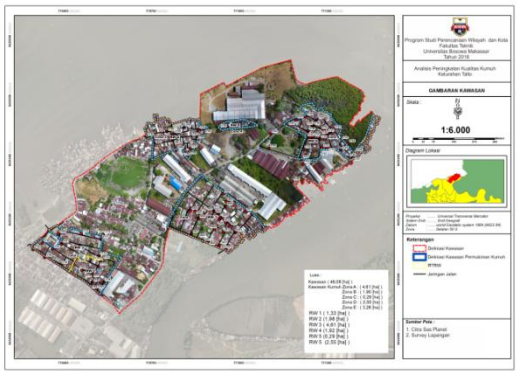

Fig 1. Tallo Urban Village

Land use in Tallo Urban Village, which is mostly for settlement, illustrates the high need for residential land. The high rate of residential land can also be identified in the development of settlements based on a comparison of the picture of settlements in 2010 and 2018.

The type of buildings in Tallo Urban Village is mostly dominated by residential houses spread out on the outside of Tallo Urban Village.

On the other hand, warehouses are small in number, but each uses much space. Thus, the concentration of house buildings or settlements is only in one place. Houses or settlements that are only centered in one place and along with the high demand for space for houses cause their distribution to be more outward (The Jeneberang River banks and the coast). More details can be seen in Table II below:

Table-II: Area of RT and RW of Tallo Urban Village

RW	RT	Area (Ha)
RW 1	RT 2	0.75
RW 1	RT 1	0.77
RW 1	RT 5	0.83
RW 1	RT 4	1.10
RW 1	RT 3	1.17
RW 1	RT 6	5.97
RW 2	RT 3	0.33
RW 2	RT 1	0.50
RW 2	RT 2	0.59
RW 2	RT 4	0.68
RW 2	RT 5	13.27
RW 3	RT 1	4.41
RW 3	RT 4	5.94
RW 3	RT 2	1.75
RW 3	RT 3	1.94
RW 3	RT 5	2.15
RW 4	RT 6	1.24
RW 4	RT 5	1.47
RW 4	RT 3	1.51
RW 4	RT 4	1.55
RW 4	RT 2	2.28
RW 4	RT 1	2.49
RW 5	RT 1	2.82
RW 5	RT 2	3.33
RW 5	RT 3	4.28
RW 5	RT 4	0.24

Source: BPS – Statistics Indonesia, Tallo Urban Village 2018

- **Population Density:**

Human resources are a significant potential in the development of a region. Population in the development process is the leading indicator in development because of its position, other than as the actor, as the object of development itself. This shows the importance of human resources to develop the region and improve its quality in general. With this consideration, improving the quality of human resources must remain one of the main priorities of development in the future.

— Number and Distribution of Population

In general, the population growth in Tallo Urban Village has fluctuated for several years. The population in 2013 was 7,987 people, in 2014 amounted to 8,191 inhabitants, in 2015 amounted to 8,226 people, and in 2016 and 2017 amounted to 8,259 people and 8,286 people respectively. More details can be seen in the table.

— Population by Age and Gender

- The population of Tallo Urban Village (2017): 8,286, of which 4,132 were male, and 4,154 were female, and 1,842 were married from 26 RTs and 5 RWs,
- The population of Tallo Urban Village (2016): 8,259, of which 4118 were male and 4,141 were female, and 1,842 were married from 26 RTs and 5 RWs
- The population of Tallo Urban Village (2015): 8,226, of which 4,101 were male and 4,125 were female, and 1,825 were married from 26 RTs and 5 RWs
- The population of Tallo Urban Village (2014): 8,191, of which 4,083 were male and 4,108 were female, and 1,772 were married from 26 RTs and 5 RWs
- The population of Tallo Urban Village (2013): 7,987, of which 3,980 were male and 4,007 were female, and 1,653 were married from 26 RTs and 5 RWs

- **Environmental Road Width:**

Road network system is a collection of road segments that are united in a node (intersection). The road network in the planning area functions as a local road and an environmental road network that connects units of activity within the region to other regions.

The local road network is a road network that connects environmental activity centers, regional activity centers with environmental activity centers, between local activity centers, or local activity centers with environmental activity centers, and between environmental activity centers.

The environmental road network is a road network that connects the centers of activities within the area and roads in a residential environment or connects between plots of land within a residential area. For transportation facilities and infrastructure, there are only motorbikes and cars in the slum area of Tallo Urban Village, such as school transport cars, sub-district office operational cars and private community cars and there are boats for those who are working as fishermen. The width of the road in Tallo urban village can be seen in Table III below:

Table-III: Road Width Per-unit

Road Width (Cm)	Unit
50 – 100	9 Units
101 – 200	77 Units
201 – 300	37 Units
301 – 400	21 Units
401 – 500	21 Units
501 – 600	1 Unit
601 – 700	1 Unit

Source: Survey Results, 2018

Then, the road material in Tallo Village is dominated by paving block. The data is presented in Table IV below:

Table-IV: Road Physical Condition

Road Condition	Physical	Unit
Cast		25
Wood		2
Paving Block		201
Hardening		2
Soil		2

Source: Survey Results, 2018

— Drainage Conditions

The drainage network, besides functioning to drain rainwater from the road also serves as a place for disposing of household wastewater, so that the presence of a drainage network can prevent the emergence of puddles or floods. Based on the results of the field survey, in the planning area, there was a lack of drainage, both on the main road and on the environmental road in the form of sediment drainage and open drainage. For more details, see Table V below:

Table-V: Drainage Physical Conditions

Drainage Physical Conditions	Unit	Drainage Width	Unit
Sediment	17	30- 35	16
Open	46	40- 45	9
Close	14	50- 55	18
		60- 70	5
		80	3
		100	2

Source: Survey Results, 2018

— Waste Water Management

Sanitation is a means of hygienically collecting and removing farces and community wastewater so that it does not endanger the health of a person or society in general.

— Clean Water Supply

The availability of clean water in the Tallo Urban Village or Tallo urban slum area can be said to be reduced, where the area does not have proper water distribution. The availability of clean water for the people in Tallo urban village generally relies on water supplies provided by water providers or in other words to obtain clean water the community in Tallo urban village must buy water for Rp. 3,000 per cart.

Even though there are springs, and there are people who have private drill wells, water availability is not able to meet daily needs; it is also inseparable from low groundwater levels. For more details, see Table VI below:

Table-VI: Clean Water Availability

Clean Water Availability	Unit
Private Drill Well	2 Units
Public Drill Well	1 Unit
Total	3 Units

Source: Survey Results, 2018

— Building Layout

Buildings in Tallo Village are dominated by settlements and/or houses spread on the outer side of Tallo Urban Village. Meanwhile, the number of warehouses is quite small, but uses a large area, so that houses or settlements only concentrate on one place. Due to houses or settlements that only concentrate on one place and along with the high need for shelter, the distribution of houses itself is more outward (Jeneberang riverbanks and the coast).

— Building Status

For the Tallo urban village, most of the population has legal status, but in it, there are several illegal building units with non-permanent types.

B. Discussion

- **Analysis of Slum Settlements**

Slum settlement is a problem that often occurs in big cities, according to (Sinulingga, 2005) there are several variables that can be used as a reference to determine whether a region is a slum or not, namely population density, environmental road width, drainage conditions, wastewater management, clean water management, building layout and building status. In this case, if one variable is problematic, the other variables will be affected.

- **Analysis of Population Density**

Population density is the first variable to be discussed in analyzing population growth that occurs in a region or city; Population problems are challenging to regulate because there are no regulations that limit out and in-migration from one region to another. The number of populations increases in the Tallo urban village in the last five years continues to increase by 0.0068%. Analysis of Environmental Road Width

The width of the road is the next variable, which is an indicator of the slums of a region. The width of the road positively affects the function of the road itself. When the community cannot use road maximally, it becomes a problem that will affect the mobility of the community. It will get worse if there are no lanes for garbage vehicles, and fire fighting vehicles as non-natural disaster mitigation.

- **Analysis of Drainage Conditions**

Drainage conditions are also indicators of slums. The drainage condition in question is drainage that functions appropriately, not disturbed by blockage of waste or sedimentation. In total, 17 drainage units have experienced sedimentation in Tallo Urban Village.

- **Analysis of Waste Water Management**

Wastewater treatment is one of the variables of slum areas where if an area cannot manage wastewater, it can undoubtedly affect the surrounding environment. In Tallo Urban Village, there is no activity or action in terms of wastewater management, thus polluting the surrounding environment.

- **Analysis of Clean Water Supply**

The supply of clean water in Tallo Urban Village is uneven, and most people still rely on well water. As for clean water for consumption, the public must buy drinking water from residents connected to the PDAM (Regional Water Company); this must be addressed immediately because the role of clean water is very vital.

- **Analysis of Building Layout**

Building layout also affects the variable of slum areas where the buildings in Tallo Urban Village are not far apart, resulting in irregularities.

- **Analysis of Building Status**

Building Status is the last variable as an indicator of slums. In Tallo Urban Village, there are still illegal buildings, with non-permanent status.

- **Chi-Square Analysis**

Each region or region categorized as slum has its triggers. In the Tallo urban village itself, the causes of the development of slums are very complex, including the provision of facilities and infrastructure that are not in line with the population that continues to increase every year. For more details, see the following analysis:

V. CONCLUSION AND SUGGESTION

A. Conclusion

Based on the results of Chi-Square analysis, the cause of the development of slums is population growth, which continues to increase each year. Among the seven existing variables, population growth or population is the most important or primary cause. One reason is the allocation of the area in RT/RW of 2015-2034, Tallo Sub-District as a medium and high-density settlement as well as an industrial area. Another important thing is that the area of Tallo Urban Village does not increase while the number of residents continues to increase.

B. Suggestion

The number of developments in slum settlements must be suppressed by implementing regulations that limit residents who want to settle in the Tallo Urban Village both permanently and temporarily.

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Rudi Latief, born in Makassar July 17, 1968, the author is domiciled in Makassar with elementary schools starting in 1976 until graduating from high school in 1987. The higher education was continued at "45" University Makassar in 1987 in the Department of Planology completed in 1994. 2001 a Master's degree was held at Hasanuddin University in the Department of Regional Planning and Development, currently pursuing a Doctor in the Population and Environmental Education Study Program at Makassar State University. The author is also a lecturer at Makassar Bosowa University in the Study Program of Regional and Urban Planning from 1994 to present.

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