

Conference Paper

Level of Slum Settlements in Tanjungpinang City, Riau Island

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Abstract

The phenomenon of population growth is a common problem in Indonesia. This will raise the emergence of a slum in urban areas, including Tanjungpinang City. The purpose of this study was to analyze factors affecting slum settlements in Tanjungpinang, Riau Islands. The method used was Geography Information Systems (GIS) with survey approach with instruments involving observation guidelines and interviews. The data analysis method employed the slum assessment scoring method from the Ministry of Public Works and Housing (MoPWH) Directorate General of Human Settlements. The results show that the factors rendering slum settlements in Tanjungpinang, Riau Islands can be classified into four aspects: irregularity buildings, unmet demand for daily needs water, wastewater management system that does not meet the technical standards and the lack of fire protection infrastructure. Based on these criteria, the slumness of Tanjungpinang was considered at a low level. The recommendation of this study was to repair and improve environmental conditions, in both physical and social terms.

Keywords: Slum settlements, Level of slum, Standard of living

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1. Introduction

Slums are a residential area that is uninhabitable or habitable because it can endanger the lives of people who live and settle in them, both in terms of security and especially in terms of health [1]. Slum is a general impression or picture of attitudes and behavior that is low in terms of middle-class living and income standards [2]. The phenomenon of slums will not be separated from the development of the region and the city. This kind of phenomenon does not only apply in metropolitan cities but also in developing cities.

Slums or often known as *slum areas* are areas with high population density in a city that is generally inhabited by mendicant [3]. The fact that we often see in Indonesia, slums illustrates an uncomfortable atmosphere. A settlement environment will occur the slum process occurs when a group of low-income residents occupies a very limited area of limited land, facilities, infrastructure, and so on [4]. So that the environmental

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conditions turn solid and the ability to improve themselves and their environment are reduced. Then the environment is not able to accommodate all existing activities. Socially the slum areas also have an impact on public health, and also become a cause of criminal acts.

The inaccurate use of space causes problems that arise both in terms of physical and social aspects when reviewed. The use of spaces in the slums is in a situation that is not by its original function. This situation resulted in the emergence of enclaves of settlements in border areas for the needs of green open space or lands that were not by their designation. The settlements emerged with insufficient facilities and infrastructure, poor housing conditions with high density and threatening the health conditions of residents.

The city of Tanjungpinang is one example of a developing city that does not escape the problem of slums. According to Mayor Decree No. 337 of 2014, there are seven slum areas in Tanjungpinang, namely Kampung Bugis, Pelantar Sulawesi, Pantai Impian, Lembah Purnama, Senggarang, Tanjung Unggat and Sungai Nibung Angus with total slums of 150.2 Ha.

As a developing city, Tanjungpinang has been experiencing rapid economic development in the past few years. Hence, it is urging this region to continue to grow and encourage population growth figures. Also, other supporting factors that make Tanjungpinang have some slum areas are because of the traditional habits of the people.

In some suburbs or coastal areas, Tanjungpinang with poor environmental sanitation conditions makes people throw all household waste into the sea. Tanjungpinang city which is still in a transition period makes the availability of facilities and infrastructure not as sufficient as to all other areas. As a result, these traditional habits are always being brought up to now that will further aggravate the condition of hygiene and environmental health.

Some of the problems that have arisen in Tanjungpinang City are due to a lack of public knowledge about maintaining a residential environment; the government should take quick action to overcome the conditions of the slums. For this reason, the authors are interested in researching with the title "Level of Slum Settlements in Tanjungpinang City, Riau Islands." The aim is to analyze the factors that affect both slums in general and based on slum parameters and analyze the distribution of slums in Tanjungpinang City.

2. Method

The method used in this research is a GIS method with a survey approach. GIS method is defined as a tool or media for entering, retrieving, storing, analyzing, manipulating and displaying geographic data or geospatial data. GIS is useful to support the decision-making process in a plan [5]. Furthermore, the survey method is a research method whose purpose is to collect large amounts of data in the form of variables, units or individuals at the same time [6].

The survey technique is used in conducting interviews, observations, and documentation which will then be analyzed using the GIS method. Data analysis using the scoring method based on slum criteria. The scoring method is a method of giving scores or values to each parameter to determine the level of ability[7]. Data analysis using a scoring method based on slum criteria of the Ministry of Public Work and Public Housing Directorate General of Human Settlements (2016). Furthermore, all data will be overlaid to produce a map of the slum level of settlements in the city of Tanjungpinang Kepulauan Riau. The mapping level of slum settlements will not only be as information related to the design of the city but also provide information for the community to avoid slums with all the hazards they grow [8].

The population is the overall symptom of individuals, cases, and problems studied in the research area and becomes the object of research [9]. The people of the area in this study is the whole Tanjungpinang City and its human society; as in the entire community in Tanjungpinang City. The sample in this research is ninety respondents taken by proportional random sampling technique. Instruments we used are in the form of observation and interview guidelines. Then this research uses data collection techniques of literature study, observation, interview and documentation study.

This study uses a single variable. A single variable is a set of several symptoms that have several indicators or aspects in it whose function dominates in a problem without being associated with the others [10]. The variables in this study refer to the provisions or regulations of the Ministry of Public Works and Public Housing No.02 / PRT / M / 2016 concerning aspects and criteria for residential areas (see Figure 1).

3. Results and Discussion

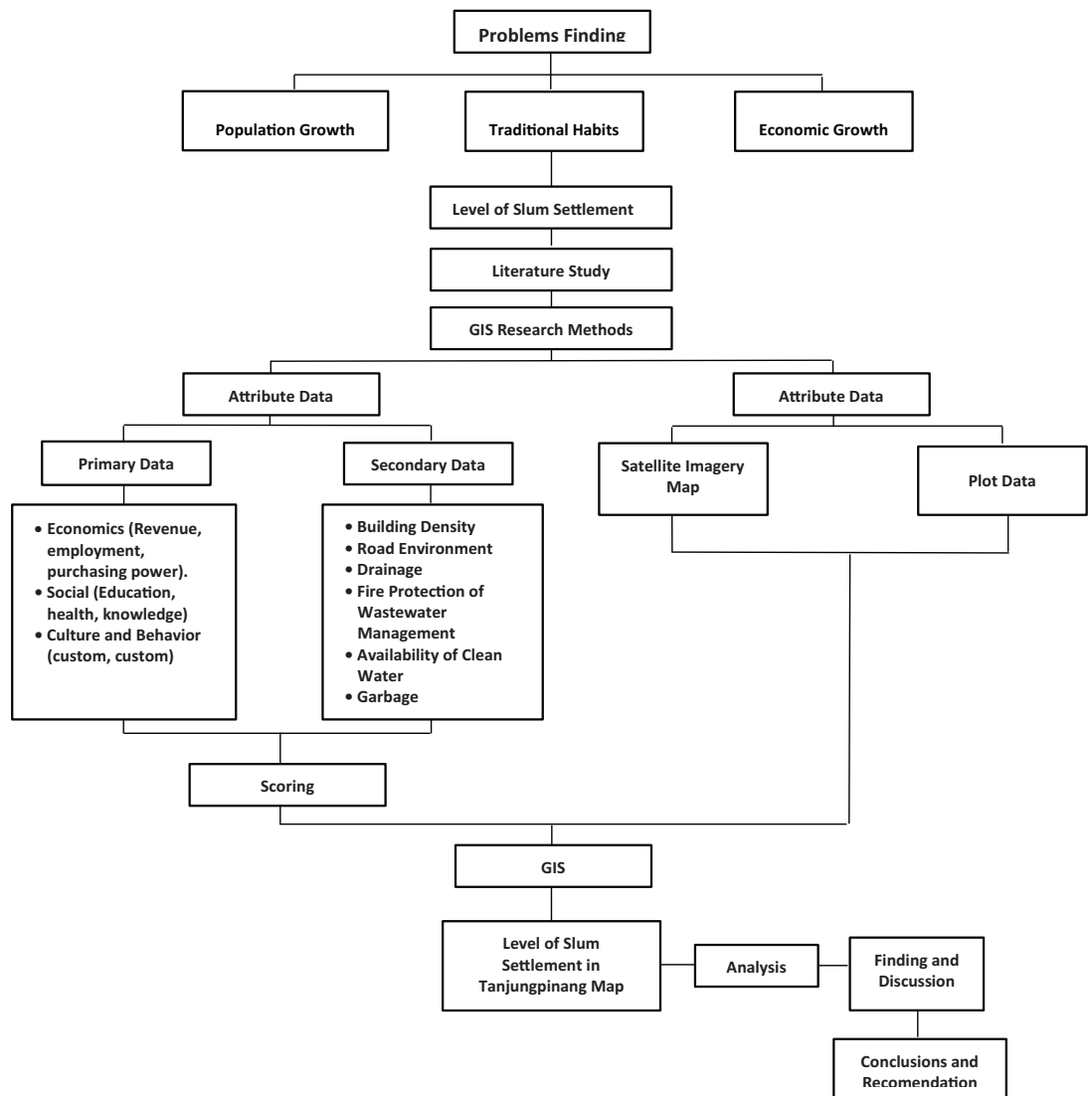


Figure 1: Research Flowchart.

3.1. Factors affecting slum in Tanjungpinang City

Slum settlements are one example of the phenomenon that emerges at this time. The phenomenon of slum settlement resulted in an unbalanced environmental condition. Various parties one of which is the government as a stakeholder, have tried to take action in efforts to reducing and overcoming the existence of slums in Indonesia.

Before moving further to reducing or minimize the phenomenon of this slum settlement we should analyze any factors that affect the existence of slums in a region. This needs to be done because each slum area has different causes or background problems.

In general, there are physical factors and social factors involved in affecting slum in a region. For the Tanjungpinang City area, researchers have conducted interviews with

residents in the slum area of Tanjungpinang City to know and get a direct review of the real situation in reality.

Slums are usually associated with poverty. However, for the Tanjungpinang City area based on the interview results, most interviewees show result that they are high school graduates. The community's income also indicates that most are already paid with minimum wages. This proves that slum conditions are not always related to the low living standards of the city.

Apart from the factors above, this study also shows that the condition of slum settlements in Tanjungpinang is caused by poor water quality and difficulty to get access to clean water as supported by seventy-nine percent of respondents. Following with how there are still so many improper placements to garbage disposal, with as much as fifty-two percent of respondents have admitted throwing garbage by dumping it into the sea, this, if done continuously, will increase the number of slum and then will have an impact on public health. The next factor is the people in this slum area do not have septic tank facility so the majority of residents here still uses the old way to throw all those disposals directly into the sea.

3.2. Level of settlements of Tanjungpinang Municipality based on the Slumness Parameters

Technically, slum settlements are said to be unfit for being unable to meet the requirements for good shelter. Slums are emerging with inadequate facilities and infrastructure, poor home conditions with high density and threaten the health conditions of residents.

In realizing the functioning of settlements, prevention and quality improvement of slums is done to improve the quality of life and livelihood of the community. It also aims to improve the quality and function of housing and settlements aimed at ensuring the right to live according to the provisions of regulations and legislation.

The purpose of this study is to identify the level of slum settlements in Tanjungpinang City based on slum settlement parameters. Following the Ministerial Regulation of Public Work and Public Housing No.02 / PRT / M / 2016 on the aspect and criteria of slum areas. Slums have seven points and 19 criteria. In this case, the data are obtained from the observation of the related institutions that deal with the problem of slums.

3.2.1. Mansion building

Based on the location research with the condition of the buildings, there are four locations deemed ideal in the category such as; Kampung Bugis, Pelantar Sulawesi, Pantai Impian, and Tanjung Ayun Sakti. Furthermore, the site of slums in Senggarang, Tanjung Unggat, and Sungai Nibung Angus are classified as the average in category. For the criteria of building irregularity, the largest score is located on Pantai Impian and Tanjung Unggat. While the criteria for building density level all the locations are worth one or deemed still in good condition. Furthermore, on the criteria of non-conformance with the technical requirements of building the most significant score is at Senggarang with a score of three.

3.2.2. Road environment

From the secondary data obtained by environmental road calculations researchers, all seemed to only achieve one in the score. However, there are some facts that researchers get in some locations that the road is still a pretty serious problem. Because there are so many settlements whose roads are not adequate. Especially in this slum area, many stage houses have tiny road, and then in some locations, the road is hollow and damaged.

3.2.3. Water supply

Based on research that has been done, locations that are still in a good category in terms of water for daily needs supply are located on Pantai Impian, Senggarang, Tanjung Unggat, and Sungai Nibung Angus. While three other locations Kampung Bugis, Pelantar Sulawesi, and Tanjung Ayun Sakti fell into the category of average. On the criteria of safe access of water for daily needs, all locations have the same score that is one. Then for standards of unfulfilling water for daily needs, the highest score is at the site of Kampung Bugis, Pelantar Sulawesi and Tanjung Ayun Sakti with a count of three. According to the facts in the field, the limited provision of water for daily needs is still a big task for the government to fulfill. In other words, this means that the distribution of water for daily needs supply is not spread evenly, especially in slum areas of Tanjungpinang City.

3.2.4. Drainage

Based on research that has been done, for the drainage aspect, ninety percent is in good condition with a total of six slum areas included in an ideal category that provides for; Pelantar Sulawesi, Pantai Impian, Tanjung Ayun Sakti, Senggarang, Tanjung Unggat, and Sungai Nibung Angus. Then the location of slums of Kampung Bugis is included in the average category. On the criteria of the inability to drain water runoff, all the sites are flat in score one which means they are still in good condition. Then on the criteria of unavailability of drainage, Kampung Bugis became the greatest value location with a score of five and Senggarang with score of three, the rest still in good category. Furthermore, for the criteria of non-connection with the urban drainage system, the non-maintenance of drainage, as well as the quality of drainage construction of all locations are still in a good category with a score of one.

3.2.5. Wastewater management

Based on the research of the slum areas of Pantai Impian, Tanjung Ayun Sakti, Tanjung Unggat and Sungai Nibung Angus are in the ideal category of wastewater management. As for the Kampung Bugis area, Pelantar Sulawesi and Senggarang Intersections are included in the average class in wastewater management. In this aspect of wastewater management, there is no slum area covered in the poor class. In the criteria of wastewater management system not following technical standards for the location of Kampung Bugis, Pelantar Sulawesi, and Senggarang are in category score of three, and other areas are still in good category. Then for the criteria of wastewater infrastructure and facilities not under technical requirements, Kampung Bugis has its own highest score with a score of three, and other locations are in an ideal category with a score of one.

3.2.6. Waste management

Waste management has three criteria. For these three criteria, the waste infrastructure and facilities are not in accordance with the technical requirements, the waste management system that is inconsistent with technical standards and the non-maintenance of waste management facilities and facilities of all locations are in either category with a score of one with the exception of the location of Senggarang has a score of three on all criteria. The problem of waste management is also a serious task to be dealt with, not only from the government but the need for awareness from the community itself to

maintain cleanliness. The background of this research has also revealed that one of the biggest causes of a slum in Tanjungpinang City is the habit of people who still throw garbage into the sea. Also, it is undeniable that the facilities and infrastructure for waste are also not maximized. This will further aggravate the issue.

3.2.7. Fire protection condition

Based on the research that has been done on the fire protection aspect there are four slum settlement locations that dominate in poor categories such as the location of Kampung Bugis, Senggarang, Pelantar Sulawesi and Tanjung Unggat. While the other three sites have ideal fire protection conditions that are classified as Pantai Impian, Tanjung Ayun Sakti, and Sungai Nibung Angus. Fire protection has two criteria: unavailability of fire protection infrastructure and unavailability of fire protection facilities. The results of the second field survey of these criteria have the same final value, for the location of Kampung Bugis, Pelantar Sulawesi, Senggarang and Tanjung Unggat enter into a poor category with score five. Then Pantai Impian, Tanjung Ayun Sakti, and Sungai Nibung Angus are in an ideal category with a score of one.

In conclusion, there are four aspects that most affect the condition of a slum in Tanjungpinang. The first aspect of fire protection with the criteria of unavailability of fire protection infrastructure and the unavailability of fire protection facilities has a total value of forty-six. Secondly, the drainage aspect with the criteria of inability to drain water runoff, drainage unavailability, unrelated to the urban drainage system, non-drainage maintenance, and quality of drainage construction received a total score of forty-one. Thirdly, the aspect of the building with the criteria of building irregularity, the level of building density, incompatibility with the technical requirements of the building has a total score of thirty-seven and fourth is the aspect of waste management with the criteria of infrastructure and waste facilities not in accordance with technical requirements, technical standards and non-maintenance of waste management facilities and infrastructure with total value of twenty-seven. In addition to the four aspects mentioned, there is also a wastewater management aspect with a total score of twenty-two, environmental road aspect with overall score fourteen and the last water for daily needs supply with total score ten.

3.3. Distribution of the Slum level of settlements in Tanjungpinang City

In general, individuals will assess a slum-based only on what is seen not in terms of geography. Therefore, this research will provide a map of the distribution of slum settlements that can facilitate the reader to know and understand the slum location information in Tanjungpinang, and more quickly in knowing the quality, quantity and spatial distribution.

Besides, the driving factor of this research is because there is no research done related to slum settlements in Tanjungpinang City, especially in the mapping of the quality distribution of slums. In determining the identification of slum areas is done by determining the priority of criteria that affect the slums using seven indicators of slum settlement (Directorate of Development Residential Areas, 2016).

The identification of this slum spread will be useful to see thoroughly in terms of condition and specific character of each settlement in contribution to knowing what factors affect the distribution of slum settlements and how appropriate and effective handling to improve the quality of settlements. The following authors present findings of the spread of slums in Tanjungpinang City (see Figure 2).

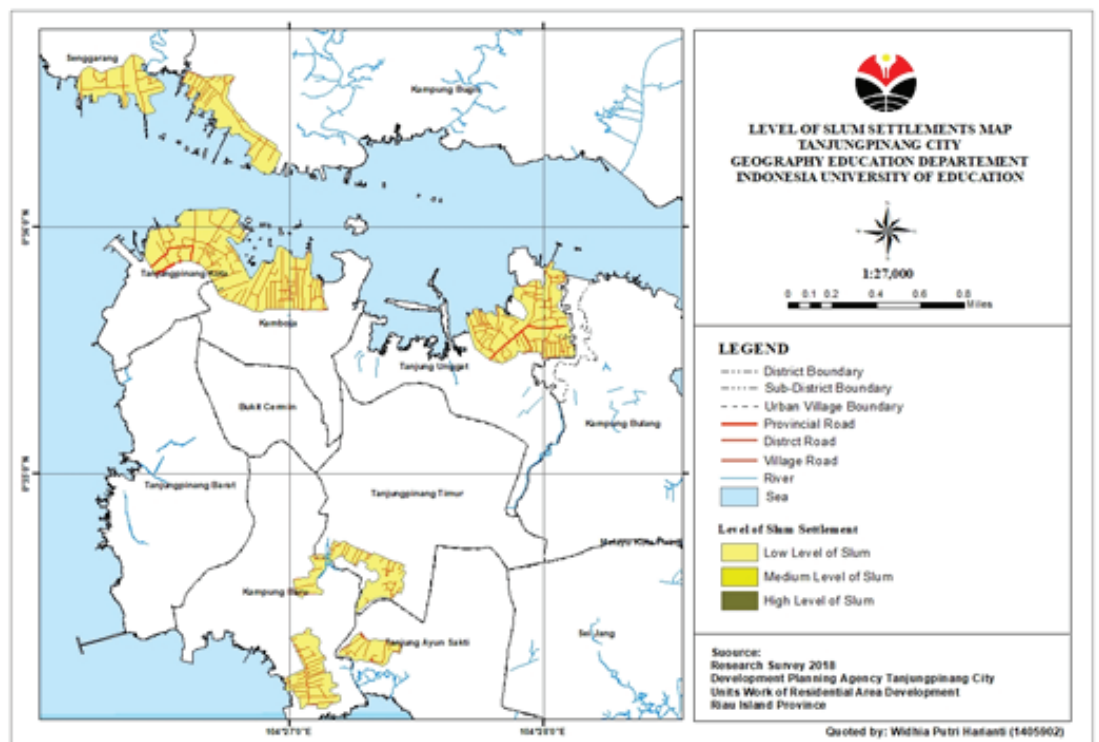


Figure 2: Map of the Level of Slum Settlements in Tanjungpinang City.

4. Conclusion

This study indicates that the general factors affecting the slums of Tanjungpinang City are poor water quality, the habit of disposing industrial waste into the sea, and how the majority of residents that have been studied do not have septic tank facilities which are causing the piling dumps in the sea. Based on the calculations of the slums of the Ministry of Public Works and Public Housing Directorate General of Human Settlements of seven slum dwellings in Tanjungpinang City, all of them are located on the slum level. Based on this research, Tanjungpinang still fell into the slum category although the result is relatively low. From the facts that occur in this slum area, there needed to be a program to handle this problem thoroughly and fundamentally in a continuous way so that our effort to fight this issue could be done comprehensively. For that reason, the government should take quick steps to prevent and improve the quality of slum settlements, supported by the behavior of the people who are aware of the environment and leaving behind unfavorable traditional habits.

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