

## Characteristics of slum housing at TPA Suwung

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### ABSTRACT

Economic development in urban areas indirectly changes the function of residential areas into commercial areas. Along with the development of the function of the Gajah Mada area, the threat of decreasing the visual quality of Jalan Gajah Mada as an artifact of the corridors of the Denpasar Old Town area naturally cannot be avoided. The need for increased trading space, high building density, development of economic functions that are more commercial in nature due to the demands of profit and modernization as well as a slum environment can also eliminate the visual character of the physical corridor of Jalan Gajah Mada which still retains the characteristics of Balinese architecture and the image of Kota Tua because Therefore, it is necessary to study the visual characteristics of the physical corridors of Jalan Gajah Mada so that directions regarding the arrangement should be considered in accommodating changes in the physical corridors so that they remain visually aligned. This research method is a type of descriptive research using qualitative methods. Descriptive research is a research that aims to provide a systematic, factual, accurate description of the facts and characteristics of the population so that it can produce the physical characteristics of the Jalan Gajah Mada corridor as seen from the path elements, architectural patterns and street trees that surround the corridor.

**Keywords:** characteristics; visual; road corridor; commercial; corridor.

### INTRODUCTION

Population growth and urban development are two mutually influential components that cannot be separated. Indicators that influence population growth in Denpasar City are the increase in the number of births and population movement (urbanization). High urbanization encourages uneven economic growth and triggers the growth of various new problems (Gultom & Sunarti, 2017). One of them is the emergence of settlements that cannot be controlled and integrated into a planned settlement and lead to the emergence of slums (Hariyanto, 2010).

Slum is a residential neighborhood that is sometimes legal. Judging from the physical condition, slum is an environment that is not suitable for habitation and does not even meet the definition of a residential area that meets the standards. Various definitions of slums have been written in various articles. Slum settlements can be seen from three sides, namely the physical condition of the settlements, the socio-economic conditions of the local community, and the consequences of the local conditions. Slums are areas where housing and living conditions in the area are very bad (Kurniasih, 2007). Slum housing is housing with a decrease in the quality of the function of the building as a place to live. Slums are defined as places where poor people live in the suburbs and are dominated by migrants who live illegally (Habitat, 2003).

Slum areas have the characteristics of a vulnerable physical environment, inappropriate for habitation, low socio-economic quality of the community, and some parts of the residence do not have legal legality and are not in harmony with the law or the RTRW (Alit, 2005). The basic characteristics of slum buildings are the condition of the building that does not have adequate lighting, poor condition of residential buildings, lack of various kinds of facilities such as toilets, water, and lack of basic availability of social and physical services (C.Chandramouli, 2003). Based on a number of these definitions, slum settlements occur due to the incompatibility of the available land capacity compared to the number of people living in an area. In general, the dominant slum locations are in the city center, center, and suburbs. Slums have uninhabitable conditions, dirty environment, poor sanitation, use of used building materials, polluted wells and are often associated with high criminality. Comfortable settlements can be seen from 3 components, namely economic,

social, and physical components. These three components are endeavored to prevent a decrease in environmental quality with the active contribution of the people and the provision of employment (Firdaus & Nurini, 2015).

Several researchers have studied various aspects of slum settlements and sought solutions to some of the problems that occur. One of the studies examines the slum settlements on the Ci-Liwung river side with case studies in Manggarai-Srengseng Sawah Village and Kampung Melayu-Kalisari Village. This study uses PP No. 35 of 1991 regarding rivers as a reference for analysis. This study shows that the characteristics of slums in the outskirts of Ci-Liwung have different levels of slums (Aliyati, 2011). Another similar research is related to the study of the characteristics of slum areas in Kampung Kota case study: Kampung Gandekan, Semarang. This study examines slum settlements using settlement theory with five basic elements of settlements described by (Doxiadis, 1976), and the results of the research show the level of slums in Kampung Gandekan Semarang (Nursyahbani & Pigawati, 2015). On the other hand, in particular, slum settlements cause bad perceptions of government administration (Rizka et al., 2018). (Rizka et al., 2018)

Research related to the characteristics of slum settlements in Denpasar City is still very limited. The research location is located in the largest slum settlement in South Denpasar, namely in the Suwung TPA area with an area of 25.2 hectares, with a population of 665 people, 200 families, and a total of 342 buildings (D. P. K. Denpasar, 2018). This research was conducted to obtain the latest information on the characteristics of settlements and the classification of the level of slums in the Suwung TPA slums. This research was conducted to identify the demographics of the community, the characteristics of residential buildings, the characteristics of facilities and infrastructure, and the environmental characteristics of the Suwung TPA.

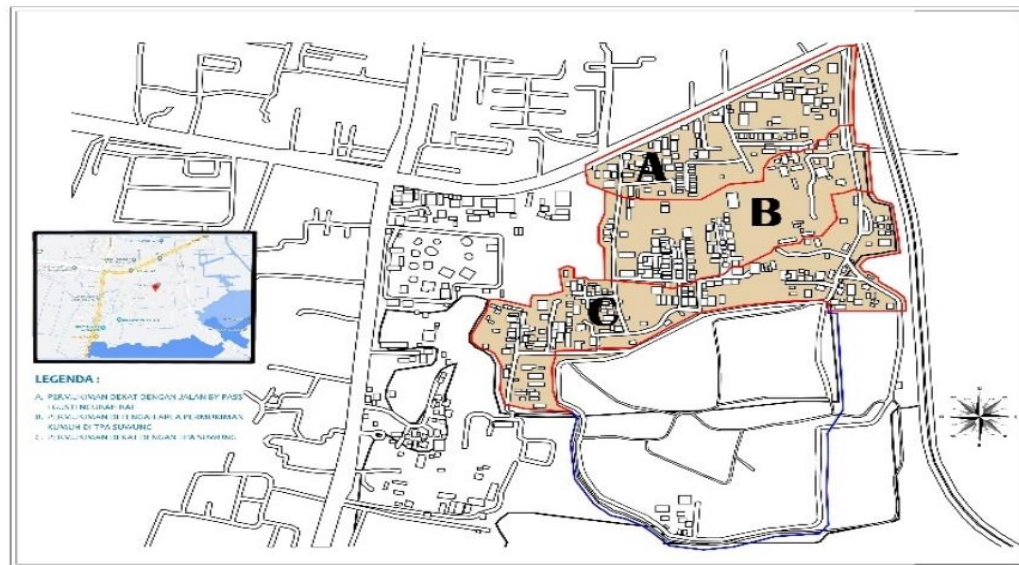
The main problem of slum settlements in Suwung TPA lies in the poor physical condition of the housing, poor drainage and sanitation. TPA Suwung has a mixed function characteristic of residential and commercial areas. Suwung TPA is located in the downtown area of Denpasar and is close to the trade and service area. The impact of the existence of slum areas in Denpasar City is a decrease in environmental quality which affects the development of urban planning. The final findings of this study are to provide an overview of slums in Suwung TPA, the characteristics of slums and the classification of slum levels.

## RESEARCH METHODS

The study used descriptive quantitative methods and was conducted in Suwung TPA Slum Settlement, Denpasar City with data from the last five years (Sugiyono, 2007). Determination of the sample using purposive random sampling (Usman & Akbar, 2006). The stages carried out in this study include analysis of community demographics, characteristics of residential buildings, facilities and infrastructure, and the environment. Analysis of the characteristics of slum settlements produces an assessment score through the existing conditions at the research site. This scoring analysis is used to determine the level of slums in accordance with existing regulations.

### Region Overview

The slum settlement in Suwung TPA is one of a number of slum areas in the city of Denpasar (W. Denpasar, 2016) where the total population is up to 665 people with a density of <150 people/ha, 200 families, and 342 buildings. TPA Suwung is located at coordinates 80430110550S and 115013090330. Observation and analysis of the Suwung TPA area is divided into 3 regional delineations, namely the settlements of TPA Suwung A, B, and C.



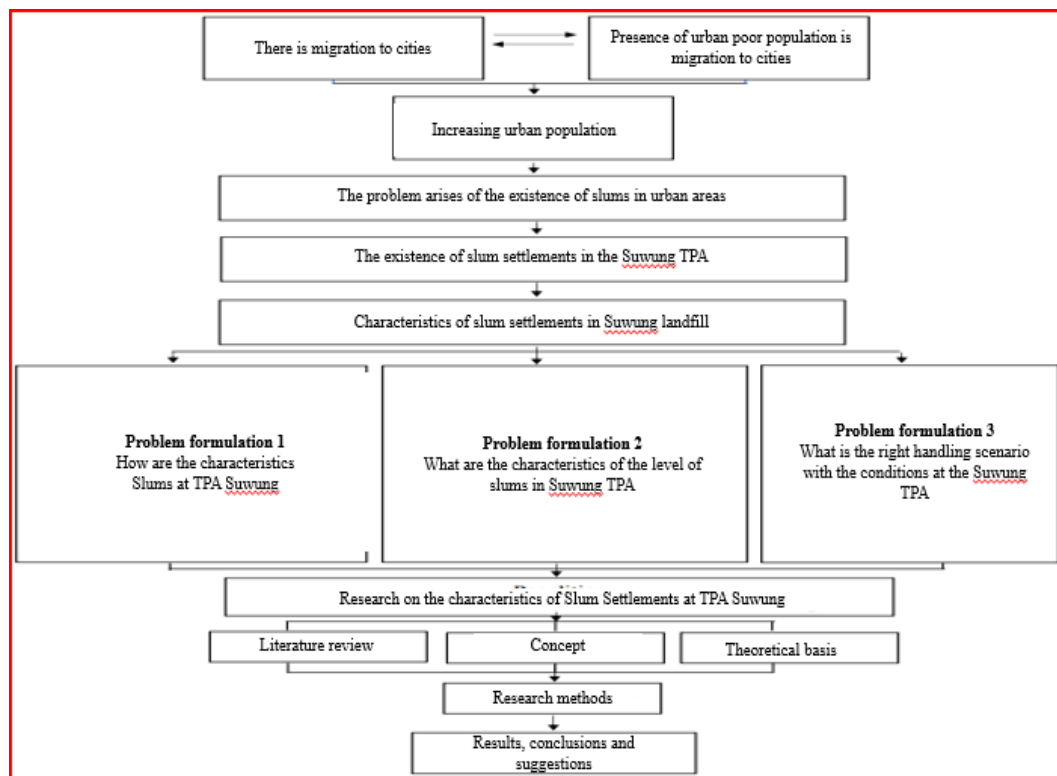
**Figure 1.** Map of Suwung TPA Settlement Locations (Observation Results, 2021)

### Data collection

The variables used in this study are the independent and dependent variables. The independent variables are slum indicators including road conditions, buildings, environmental drainage, water availability, waste and waste management, green open spaces, and fire safety. The dependent variable is the characteristics of slum settlements which include the conditions of heavy, medium, and light slums. The data used are primary and secondary. Primary data obtained from the results of interviews, questionnaires, direct observation, and documentation. Secondary data is supporting data in the form of theory, community demographic conditions and information related to slum conditions in the research location.

### Analysis Techniques

Data analysis was carried out by classifying the classification of research variables which included analysis of community demographics, characteristics of residential buildings, characteristics of facilities and infrastructure, and environmental characteristics. This study uses data tabulation, validity and reliability testing, descriptive analysis, weighting, discussion and drawing conclusions as data analysis techniques. The stages of the research are described by the research flow as below:



**Figure 2.** Thinking Framework (Analysis Results, 2021)

Validity testing is used to measure the validity of the questionnaire through a comparison between the calculated  $r$  value and  $r$  table with degree of freedom  $(df) = n-2$ , where  $n$  is the total sample. If  $r \text{ count} > r \text{ table}$ , the statement is declared valid and vice versa (Imam Ghazali, 2011). Reliability testing is used in measuring the questionnaire which is nothing but a variable or construct indicator. A construct or variable is called reliable if it produces a Cronbach Alpha value exceeding 0.70 (Imam Ghazali, 2011).

Bivariate analysis is data analysis that has the aim of knowing the relationship or influence of the two variables being studied. The normality test was carried out using descriptive analysis by comparing the values of  $z$ -skewness and  $z$ -kurtosis (Field, 2009). This value is obtained by comparing the values of skewness and kurtosis with their respective standard-errors. If the value obtained exceeds 1.96, it means that it is significant or the  $p \text{ value} < .05$ . If the data already has a normal distribution, bivariate analysis is carried out by applying the product moment correlation test in the form of interval data.

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{(N\sum X^2 - (\sum X)^2)(N\sum Y^2 - (\sum Y)^2)}}$$

Information:

$N$  : number of respondents

$X$  : question number  $x$

$Y$  : total score

$XY$ : the score of the question number  $x$  times the total score

Measurement of respondents' answers using a Likert scale 1-5 scale. Filling out a questionnaire about the characteristics of slum settlements in Suwung landfill using 5 options, namely: 1). The choice of option A is given a weight of 5 for very poor quality, 2). Choice of option B is given a weight of 4 for poor quality, 3). Choice of option C is given a weight of 3 for moderately poor quality 4). The choice of option D is given a weight of 2 for not bad quality, 5). The choice of option E is given a weight of 1 for the best quality (Djaali, 2008).

## RESULTS AND DISCUSSION

### Community Demographics

The residents in the Suwung TPA settlement have diverse characteristics and come from local communities and migrant residents. The number of indigenous people is 40 families and the number of immigrants is 160 families. Judging from the socio-economic conditions, the demographics of the Suwung TPA community are still in a low-income position. The income of the people of this area is obtained through work in the informal sector with incomes in the range of Rp. 200,000 - Rp. 500,000 per month. In terms of education level, the residents of the Suwung TPA settlement community are dominated by people with low education, namely the average elementary school level and not attending school. The average length of stay of people in slums at Suwung TPA is one to two years.

### Characteristics of residential buildings

The slums in Suwung TPA are dominated by buildings with uninhabitable conditions. The condition of buildings like this is often found on the eastern side of the Suwung TPA. The meaning of uninhabitable is housing that does not meet building safety standards, semi-plastered house floors, buildings with semi-permanent conditions, building roofs using asbestos and zinc, small and crowded buildings inhabited by many people, building density ranging from 70%-60%, and inadequate building health. Another characteristic of residential buildings in this area is the use of electric lighting from PLN with a power of 900 watts and illegal land status. Slums in Suwung TPA also have several areas with characteristics of adequate and livable residential buildings that meet building standards located on the west side of the Suwung TPA area.



**Figure 3.** Occupancy at the Research Site (Observation Results, 2020)

### The characteristics of facilities and infrastructure

According to the Ministry of Public Works and Public Housing can be identified from several aspects, namely the condition of the surrounding roads, waste and waste management, availability of drinking water, and protection against fire hazards.

### The environmental road in the Suwung

TPA settlement has reached all corners of the area, but the quality of the road is poor with an inadequate area. Environmental roads use flexible pavement (asphalt) with potholes and cracks on the road surface at various angles. In some lanes still using limestone soil and in some other areas using paving stones with street lamp lighting. The results of field observations are listed in Table 1.

**Table 1.** Table of Roads for Slums at TPA Suwung (results of analysis and observation, 2021)

No	Criteria	Indicators And Parameters	Score	Unit
1	Environmental Road Service Coverage	Ideal path length (minimum standard)	7.053	m
2	Environmental road surface quality is damaged	51%-75% of the area has poor road surface quality	5.253	m



**Figure 4.** Environmental Road Conditions in Suwung TPA Slum Settlement (Observation Results, 2020)

#### Drinking Water Supply

At the Suwung TPA location, the average condition is not good and it is not distributed to existing housing units. Drinking water, bathing, and washing facilities are sourced from springs around the area near settlements, which are 10m from the septic tank. This is the average distance from the water source to the septic tank. The results of the observations are listed in Table 2.

**Table 2.** Table of Drinking Water Availability (results of analysis and observation, 2021)

No	Criteria	Indicators And Parameters	Score	Unit
1	Unavailability of safe water access	76%-100% of the population cannot afford safe drinking water	198	KK
2	Unfulfilled drinking water needs	76%-100% of the population does not meet drinking water needs	198	KK

#### Drainage Condition

The Suwung TPA is considered to be of concern with puddles of water caused by the drainage channel not functioning optimally. At some points there are no adequate drainage channels to support settlement conditions. The height of the puddle is >30 cm with an average inundation time of >2 hours, the frequency of inundation occurs >2 times a year. The results of the observations are shown in Table 3.

**Table 3.** Table of Drainage Conditions for Suwung TPA Slums (results of analysis and observation, 2021)

No	Criteria	Indicators And Parameters	Score	Unit
1	Inability to drain runoff	Area affected by inundation	2	Ha
2	No drainage	76%-100% inundation area >30cm, >2 hours, and >2x a year	940	m
3	Poor drainage construction quality	The length of the drainage channel is damaged	-	m





**Figure 5.** Drainage Conditions in Suwung TPA Slum Settlement (Observation Results, 2020)

### Wastewater Management Condition

The condition of wastewater management in settlements is quite good and most residential buildings use private toilets. Some dwellings dispose of their household waste water carelessly. This can be seen from the absence of a drain for used dishwashing water that does not meet standards.



**Figure 6.** Wastewater Management Conditions in Suwung TPA Slum Settlement (Observation Results, 2020)

### Environmental Waste Management Conditions.

The results of observations and interviews in slums in Suwung TPA show that solid waste management is in a very bad condition. This situation can be seen from direct observations which show that there is no system of facilities and infrastructure for waste management. Garbage is only collected on the side of the road and on vacant land, dumped in drainage channels, burned, or placed on the banks of rivers, making conditions worse. Observations also show that the waste management facilities do not follow the standards.

**Table 4.** Table of Slums Waste Management Conditions at Suwung TPA (results of analysis and observation, 2021)

No	Criteria	Indicators And Parameters	Score	Unit
1	Waste facility infrastructure does not meet technical requirements	76%-100% of the area has waste management infrastructure that does not meet the technical requirements	197	KK
2	Waste management system that does not meet technical standards	76%-100% of the area has non-standard waste systems	200	KK



**Figure 7.** Waste Management Conditions in Suwung TPA Slum Settlement (Observation Results, 2020)

#### State of Fire Hazard Protection.

Slums at Suwung TPA do not have fire protection facilities. Judging from the road conditions, most of the neighborhood roads can be accessed by fire engines without adequate water supply.

**Table 5.** Table of Fire Protection Conditions for Slums at Suwung TPA (results of analysis and observation, 2021)

No	Criteria	Indicators And Parameters	Score	Unit
1	Unavailability of fire hazard protection infrastructure	Number of buildings not served by fire hazard protection infrastructure	200	KK
2	Unavailability of means of fire protection	76%-100% have no means of fire protection	200	KK

#### Environmental characteristics

The Suwung TPA settlement is irregular, especially the irregularity of the building layout and the road network. In addition, the characteristics of the slum environment in Suwung TPA do not have green vegetation, some parts have puddles and swamps and have an unpleasant odor. This causes discomfort for the people who pass through Serangan Island road.

#### Results of Validity and Reliability Test Analysis.

The results of the validity test of all questionnaire items on each variable were declared valid. The conclusion states that the significance obtained is smaller than the 5% significance level. The findings of the reliability analysis of the X and Y variables where a construct or variable is said to be reliable if it produces a Cronbach Alpha value that exceeds 0.70.

**Table 6.** Results of the X Variable Reliability Test Analysis (analysis results, 2021)

Cronbach's Alpha	No of Items
0,990	51

**Table 7.** Results of the Y Variable Reliability Test Analysis (the results of the analysis, 2021)

Cronbach's Alpha	No of Items
0,943	7

The findings of the validity test of table 6 state that Cronbach's omission value is 0.990 for all items that are declared valid. These results show a value of  $0.990 > 0.70$ , it can be concluded that all



questions in the questionnaire are declared reliable. In table 7 shows the value of Cronbach's omission obtained is 0.943 for all questions that are declared valid. The conclusion of the validity and reliability test results is that all questions on the questionnaire are declared reliable.

#### Normality Test Analysis Results.

The findings of the normality test are obtained from the calculation results of the z-skewness and z-kurtosis values for the X variable with values of 4.799 and 3.956, respectively. The z-skewness and z-kurtosis values for the Y variable were obtained from the calculation results of 4.782 and 2.325, respectively. The four values are greater than 1.96. Conclusion X and Y variables are normally distributed for ( $p < 0.05$ ).

**Table 8.** Normality Test Results (analysis results, 2021)

Variable	Skewness			Curtosis		
	Statistic	Std. Error	z-score	Statistic	Std. Error	z-score
Slum Indicator (X)	-1,126	0,235	-4,799	0,654	0,165	3,956
Characteristics Slum Housing (Y)	-1,122	0,235	-4,782	0,384	0,165	2,325

#### Correlation test results

Table 9 states that the Pearson correlation value = 0.940 with a significance of 0.000. According to the findings, the value of sig.  $< 0.05$ , it is concluded that there is a positive correlation/relationship between slum indicators and the characteristics of slum settlements.

**Table 9.** Correlation Test Results (analysis results, 2021)

Variable	Characteristics Slum Housing
Slum Indicator	Pearson Correlation
	Sig. (1-tailed)
	N
	.940**
	.000
	200

#### Classification of Slums in Slums at TPA Suwung.

The characteristics of slums are known by analyzing the level of slums in the Suwung TPA slums. Analysis of the characteristics of settlements in Suwung TPA was obtained from the demographic characteristics of the community, the character of residential buildings, infrastructure, and the environment. Slum level analysis was carried out to determine the classification of slums in the Suwung TPA settlement, so that strategies can be carried out to improve the quality of settlements and reduce the level of slums. The analysis technique to determine the level of slums is carried out by scoring analysis on the level of slums and typology in the Suwung TPA slum settlements.

The scoring analysis was carried out through an assessment of the condition of the slum indicators in the Suwung TPA slum settlement. The value on the weight represents the level of slums of each variable analyzed in the Suwung TPA slum settlement. 5 for very bad scores, 3 for moderate values, and 1 for good scores for each indicator of the results of the research conducted. The typology of slum settlements is determined by using an assessment analysis of the existing conditions directly. The assessment analysis was obtained from a questionnaire distributed to 200 households as respondents in the Suwung TPA slum settlement.

**Table 10.** Determination of Slum Aspects in Suwung TPA Slum Settlement (results of analysis and observation, 2021)

No	Aspect	Score of slum
1.	Building	5,0,5
2.	Environmental road	3,0
3.	Provision of drinking water	5,5
4.	State of environmental drainage	0,5,5
5.	State of waste water management	0,0
6.	Waste management	5,5
7.	Fire safety conditions	5,5
8.	Demographic conditions of the population	3,5,5
9.	Social conditions of the population	5
Total slum value		71

Based on the results of the analysis values in table 10 regarding the determination of slum aspects in the Suwung TPA slum settlement, it shows that there is a very close relationship between slum indicators and the characteristics of slum settlements. The total points obtained are 71 points. It also states directly that the level of slums in the research location is a high slum condition. The results of the analysis are supported by the demographic characteristics of the people in the research area.

The results of the analysis show that the level of slums in the research area is in the high category. Locations with high slum levels are subdivided into 3 areas with different levels of slums. The level of slums is divided based on the variables analyzed. Based on the results of the analysis of validity, reliability, normality test, and correlation, the results obtained are; 1) high slum level; 2) moderate level of slums; and 3) low slum level. The next stage is to determine the criteria and typology of slum settlements with high slum levels which are divided into three areas. This statement is in line with (Nursyahbani & Pigawati, 2015) which states that there are still differences in the characteristics of each typology of the slum area studied.

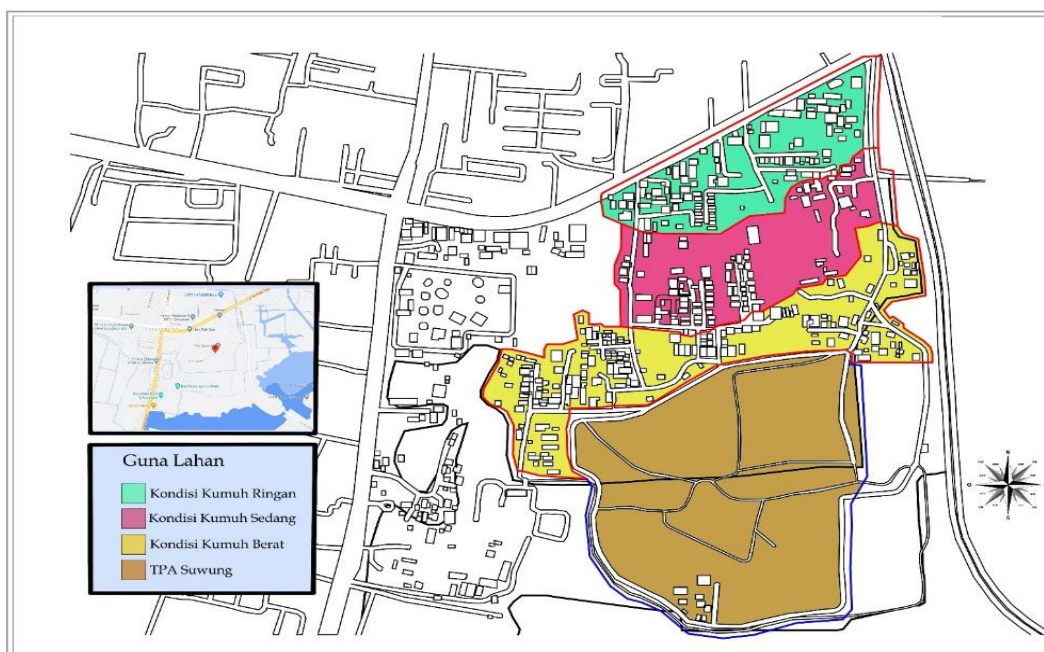
**Table 11.** Table of Formed Criteria (results of analysis, 2021)

Variable	Criteria that formed
Building condition	<b>Bad</b> , if the irregular condition of the existing building on the site has an irregular/tidy shape (non-permanent, dimensions, orientation, shape of the building that do not match one another, besides that it does not have conformity with the technical requirements of a building)
	<b>Medium</b> , if the irregular condition of the existing building on the site has a non-permanent or semi-permanent appearance, with the orientation, dimensions, and shape of the building which is quite organized/medium other than that it has 50% compliance with the technical requirements of a building)
	<b>Good</b> , if the condition of the building on the site has a permanent appearance, with the orientation, dimensions, and shape of the building in accordance with the conditions and in harmony with the technical requirements of a building.
Environmental road conditions	<b>Bad</b> , if the condition of the road settlement has not been paved, the dimensions are small, and the environmental road is not served
	<b>Medium</b> , if the condition of the road settlements has not been partially paved, the dimensions are sufficient for 4-wheeled vehicles and if some are not served by environmental roads
	<b>Good</b> , if the condition of the road settlements has been paved, the dimensions are very adequate if 4-wheeled vehicles are passed and if the entire area is served by environmental roads
Water supply conditions	<b>Bad</b> , if the water supply is not sufficient for drinking and toilet needs
	<b>Medium</b> , if the water supply is not sufficient for most of the population for drinking and toilet needs
	<b>Good</b> , if the water supply is sufficient for the entire population for drinking and toilet needs

State of environmental drainage	<p><b>Bad</b>, if there is no drainage network</p> <p><b>Medium</b>, if the drainage network is available but it is still in bad condition</p> <p><b>Good</b>, if the condition of the drainage network is maintained and functions properly and is clean</p>
Waste management situation	<p><b>Bad</b>, if there is no solid waste management system</p> <p><b>Medium</b>, if there is a solid waste management system available but it is still in bad condition</p> <p><b>Good</b>, if there is a solid waste management system in place and it runs well</p>
Fire safety conditions	<p><b>Bad</b>, if there is no fire protection system available</p> <p><b>Medium</b>, if a fire safety system is available but it is still in bad condition</p> <p><b>Good</b>, if there is a fire safety system and it runs well</p>

Based on table 11 above, the results of the criteria formed in slum settlements in Suwung TPA are obtained. The results of these criteria describe the worse the condition of the variables at the research location, the greater the score obtained by the variables tested. Conversely, if the conditions shown are getting better, the score on the variable will be smaller. This is in line with (Fitria & Setiawan, 2014) which states that the conditions of light, medium, and heavy slums are strongly influenced by the variables used in the study.

The results of the scoring analysis show that the slums in Suwung TPA are in a high slum level. The score for the slum level in the Suwung TPA slum area is in the interval of 71-95 points, with a total score of 71 points. Furthermore, this location is divided into three areas in slums in Suwung TPA, namely three research sample points. This sample point is divided based on the site layout. From the distribution of locations, it was found that high slum conditions were located close to the Suwung TPA (yellow), medium slum in the middle of the site (red), and light slums were located at the front of the site near Jl. By Pass I Gusti Ngurah Rai (green). Overall it is concluded that the characteristics of the level of slums in the Suwung TPA Slum settlement are with high slum level conditions.



**Figure 8.** Map of the Distribution of Slum Conditions by Slum Level (Observation Results, 2021)

Based on the results of the research above, it is known that the overall characteristics of slum settlements in Suwung TPA can be seen through the character of the dwelling, occupants, facilities, and the environment which have different characteristics between the research sample points and have their own uniqueness. The level of slums was obtained by the scoring method in the three

research observation areas. Some of the variables in the criteria table have some similarities between one area and another.

This finding is in line with the results of research (Nursyahbani & Pigawati, 2015) and (Fitria & Setiawan, 2014) where there are some similarities and differences in the results of the criteria table. The results of the study have different levels of slums, ranging from heavy, medium, to light slums. The results of the classification of the level of slums are obtained by scoring in the area of observation, by looking at certain variables (Nursyahbani & Pigawati, 2015). Components that influence the emergence of slum areas include facilities, population movement from rural to urban areas, urban land, economy, socio-culture, spatial planning, land and building ownership status, and duration of residence of residents (Krisandriyana et al., 2019).

Strategy to Improve the Quality of Settlements to Reduce Slums in Suwung TPA. Based on the results of the analysis, the slum area in the Suwung TPA is included in the high slum area. The following is a strategy for preventing and improving the quality of settlements to reduce the level of slums in Suwung TPA. This strategy touches on social issues such as educating the public on environmental hygiene for their knowledge.

**Table 12.** How to improve settlement quality to reduce in slums at Suwung TPA (results of analysis and observation, 2021)

Aspect	Problem	Strategy	
		Prevention	Enhancement
Building	200 KK do not meet building standards 342 units of household buildings have a density of 20 units/ha, so 8% of buildings are not in accordance with the provisions (area with a density of more than equal to 250 units/ha for big cities).	Stipulation of regulations related to buildings and the environment	Arrangement of building regularity components in accordance with technical requirements
	156 KK building units not in accordance with building technical standards (sufficient area, safety, comfort, and health)	Dissemination of building and environmental regulations	Rehabilitation of buildings so that the function and mass of the building are in accordance with the technical requirements of the building (house renovation)
Environmental road	5,253 m with damaged road surface	-	Road surface quality improvement
Provision of drinking water	198 KK do not have access to quality drinking water (clean, odorless, and polluted)	Development of healthy drinking water standards	Rehabilitation of drinking water supply units to restore conditions in accordance with technical requirements
	198 KK are not met with a minimum drinking water requirement of 60 liters/person/day	-	Addition of pipe access for house channels that have not been accessed by drinking water
Environmental drainage	2 Ha area is not served by drainage channels	Maintenance of drainage channels should be done gradually	Construction of new drainage channels and normalization of drainage channels
Waste management	6,133 m <sup>2</sup> of area not served by drainage channels	-	Construction of new drainage channels
	197 KK have waste infrastructure that does not meet the standard technical requirements	3R coaching, community-based waste	The addition of temporary trash cans at points on the main route with a segregated waste system



Fire hazard protection	200 KK have a waste management system that is not in accordance with technical standards	management development Community empowerment	Increasing the service range of the waste transportation system
	200 KK are not served with fire protection facilities in the area	Socialization of procurement of fire handling simulation	Procurement of fire protection facilities and infrastructure in the form of fire engines and hydrants

Referring to the results of the analysis, there are a number of statements that state alignment with the research by (Bani Perdanawati Hasanuddin, 2014; Zaini Musthofa, 2011). In research conducted by (Bani Perdanawati Hasanuddin, 2014; Zaini Musthofa, 2011) the statement of revitalization and relocation contains a powerful way to get a better residential environment. This condition is carried out in order to realize public health and the environment according to the standards that apply to a residential area.

In addition, the results of research on the characteristics of slum settlements in Suwung TPA are strengthened by research (Rizka et al., 2018), the study discusses the handling that can be done in slum areas. The results of the research on the handling of slum settlements in the Suwung landfill were carried out with two strategies, namely prevention and improvement. Prevention is a strategy to prevent wrong activities from the side of the applicable law, while improvement is an activity to add value to an activity so that it has a positive effect on the activities carried out. This strategy was chosen because it is in accordance with the location of the settlement, the characteristics of the people living in the location, and the procedures for dealing with slum problems in the research location. This strategy is a powerful way to improve the quality of settlements for the better.

## CONCLUSION

The conclusion of this study is that the cause of the emergence of slum settlements in Suwung TPA is the high level of urbanization of the population to Denpasar City. Causing houses to grow irregularly and not in accordance with standards, and the condition of infrastructure is inadequate. In terms of demographics, the slum community in Suwung TPA is dominated by immigrants from Java, especially Magelang, on average the people living in the research location are people with low income and education. Most of the buildings in the slum settlements in Suwung TPA are buildings that do not meet the standards for livability, the environmental road conditions are not effective even though they are able to be accessed throughout the settlement. In terms of infrastructure, there are still many houses that do not have access to drinking water, drainage conditions are not running well, waste facilities and systems are not available and protection against fire hazards is still not available. Regulation of the Minister of Public Works and Public Housing No. 2 of 2016, this area is included in the category of High Slum level (KT). This level of slums is known from the value intervals owned by slums in Suwung TPA. Slums in Suwung TPA are at an interval of 71-95 points. With a total slum score of 71 points. The results of the analysis of the high slum level in the research location can be categorized into three areas of observation, namely heavy, medium, and light slums. To complete this research, it is recommended that several other studies related to slum settlements in Suwung TPA include the priority theme for handling slums and government evaluations in handling slum settlements in Suwung TPA.

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