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AN IDENTIFICATION OF RELATIONSHIP BETWEEN REGIONAL DEVELOPMENT LEVEL AND SLUMS IN SIDENRENG RAPPANG REGENCY

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ABSTRACT
Sidenreng Rappang Regency, South Sulawesi Province was recorded to be ranked 2nd (second) as the regency/city with the highest slum area in South Sulawesi in 2020.The development of the Sidenreng Rappang Regency area as a strategic agribusiness center area with economic activity with high mobility and the increasing need for land for large-scale production facilities and housing development is suspected to have implications for the existence of this slum settlement. This study aims to identify the relationship between the level of regional development and slums in Sidenreng Rappang Regency. The research method used is a scalogram analysis on the variables of population, distance and travel time, educational, social, economic, health, and agribusiness support facilities in each village/urban village which produces the value of the Urban Village Development Index (IPK) and Village/Urban Village Hierarchy. Furthermore, the relationship between the development level and the slum area was identified through a Pearson Correlation between the IPK value and the village/urban village slum area. The results showed that the Village Development Index (IPK) with the percentage of slum area is not correlated or it can be concluded that the level of regional development has no relationship with the slums in Sidenreng Rappang Regency.
Keywords : *Regional Development, Slum Settlement, Scalogram Analysis, Pearson Correlation*

1. Introduction

The development of a region, in addition to being inseparable from population growth, is also related to all human activities to support life and life directly or indirectly (Prihatin, 2015). One of them is a residential activity whose existence is now seen not only from physical phenomena but also as a center of economic activity, a symbol of social acceptance, income distribution, and a means of meeting social needs. Indicators of a developing area are the ease with which people can obtain the demands of daily living (Woo & Jun, 2020) and the availability of existing infrastructure or service facilities (Marasabessy, 2016).

The development of urban areas is influenced by various factors including an increase in the number and activity of the population, the quantity and quality of development facilities and infrastructure, as well as social, economic, and political development of the city's interests (Pontoh & Kustiwan, 2009). The level of institutional capacity, human resources, and economic capacity determine its regional hierarchy (Rustiadi et al., 2018). According to Yasir (2009), a region is said to develop as a central area of food production if it has adequate infrastructure and infrastructure to support the development of agribusiness systems and businesses, especially food. (Yasir, 2016). The level of regional development or regional hierarchy is theoretically the level of regional service capacity which includes infrastructure, institutional, human resources, and economic capacities (Rustiadi et al., 2018).

The development of the region is like two sides of a coin, on the one hand, which on the one hand has an important role in economic growth, on the other hand, its attractiveness has resulted in increasing urbanization and the emergence of various urban problems (Jayadinata in (Wijayanti, 2019)). The phenomenon of village-to-city migration due to economic development concentrated in urban areas exponentially increases the need for housing and service infrastructure (Ooi & Phua, 2007) as a space for their activity (Jatayu in (Rusman, 2019)).

Another view related to regional development was put forward by Akil, et al that there is a relationship between the level of regional development and the level of accessibility (Akil et al.,

2020) The same thing was once stated by Chaschili,et al that the development of a region is influenced by concepts related to the ability to move and reach other locations (accessibility) efficiently (Caschili et al., 2015) This is relevant to the view that transport accessibility is an indicator and is one of the main challenges faced in urban development (Liu et al., 2018)(Lavrinenko et al., 2019). In line with what Yin, et al stated that the level of regional development has a close relationship with quality of life standards, it is essential to understand the factors that contribute to the spatial accessibility of medical and health services. (Yin et al., 2018)

The consequences of meeting housing needs for migrants who often rent houses in the downtown part because they are close to livelihood locations cause an uncontrolled process of building development (Annisa Amalia, 2018) They then use limited land to be used as a place for settlement without paying attention to the quality of the environment in it. The construction of settlements on limited land causes problems of land conversion which are often not in accordance with the provisions of the spatial function, thus causing the development of slum areas (Ardiansyah & Wagistina, 2021). The limited supply of decent housing according to Soetomo 2009 (Kaseke et al., 2017) , rising land prices due to investment in large-scale production facilities that shrink the proportion of land for housing units (Firdaus, 2012) as well as the government's inability to provide affordable housing for the poor (Ooi & Phua, 2007) are the reasons for the formation of slums or informal settlements that are inadequate public services.

The problem of slums is not a new problem but has become an issue at the global and national levels. Based on data from the World Cities Report 2020, it is recorded that more than one billion of the world's population in 2018 lived in slums (United Nations, 2020) and is expected to double or even triple by 2050 (United Nations, 2016). In Indonesia, slum areas nationwide have more than doubled in just 5 (five) years (CNN Indonesia, 2019) The area of slums in 2014 was 38,000 Ha increased to 87,000 Ha in 2019 (DJCK Kementrian PUPR, 2020)

Sidenreng Rappang Regency is developing as an agribusiness center area, especially food crops. High economic activity and population mobility as well as the growth of service centers in agricultural production areas at the village level were followed by the development of pockets of surrounding settlements that were not in accordance with the provisions of land allotment. These things are suspected to have implications for the existence of slums. In 2020, Sidenreng Rappang Regency was recorded to be in 2nd place (two) with the highest slum area in South Sulawesi (Kotaku, 2022). The slum area of Sidenreng Rappang regency in 2014 was recorded at 22.4 Ha (Pemkab Sidenreng Rappang, 2014) then in 2020 it increased sharply to 570.5 Ha (Pemkab Sidenreng Rappang, 2020). The area of slums jumped by 548.1 ha in the 2014-2020 time frame.

The handling of slums in Sidenreng Rappang Regency has been pursued through the cooperation of the central government in collaboration with the Sidenreng Rappang Regency government but has not been able to significantly reduce the slum rate. In 2021, it was recorded that the area of handled slums was only 5.85 ha (Kotaku, 2022). Based on data on the Achievement of Slum Management of the KOTAKU Program in 2021, Sidenreng Rappang Regency is still one of the areas contributing to slums that are quite high in South Sulawesi. This study aims to identify the relationship between the level of regional development and slums in Sidenreng Rappang Regency.

3. Research Methods

This research is a descriptive research with a quantitative approach. The quantitative approach is carried out through skalogram analysis and pearson correlation analysis The level of regional development is analyzed using skalogram techniques to determine the hierarchy of supporting regional centers that support the region as a center of activity service. The hierarchy is determined based on the number and type of facilities. Territorial units that have facilities with more quantity and more complex types have a higher level of hierarchy (Panuju & Rustiadi, 2013) (Sitorus et al., 2013). In this study, the unit of the research area is kelurahan, so the skalogram analysis will produce a Village Development Index (IPK). The type of data used is secondary data in the form of population data, the number, and kind of facilities in the state of educational facilities, economy, health, social, the distance of regional units, and agribusiness supporting

facilities. The data is obtained from PODES data. The data type variables are presented in Table 1 below :

Table 1 - The variable matrix used for scalogram analysis

No.	Variable	Sub Variable
1.	The Population	1.1 The Population Number 1.2 Area of villages/urban village
2.	The Distance and travel time	2.1 Distance from village/urban village to subdistrict capital 2.2 Travel time from the village/urban village to the sub-district capital 2.3 Distance from village /urban village -i to the center of government 2.4 Travel time from the village/urban village to the center of government 2.5 Distance from village / urban village - i to the nearest other city government center 2.6 Travel time from the village/urban village to the nearest other city government center
3.	Educational facilities	3.1 Number of TK 3.2 Number of SD 3.3 Number of SLTP 3.4 Number of SLTA 3.5 Number of Colleges/academies
4.	Economic Facilities	4.1 Number of minimarkets /supermarkets 4.2 Number of restaurants/restaurants 4.3 Number of shop/shophouse groups 4.4 Number of grocery stores / stalls 4.5 Number of Stalls/Eateries 4.6 Number of hotels/guesthouses/inns 4.7 Number of banks 4.8 Number of traditional markets 4.9 Number of terminals 4.10 Number of KUDs/BUMdes 4.11 Number of post-harvest facilities (rice milling, packaging,storage warehouse)
5.	Health Facilities	5.1 Number of hospitals 5.2 Number of Puskesmas 5.3 Number of physician practices 5.4 Number of pharmacies 5.5 Number of Posyandu
6.	Social Facilities	6.1 Number of Mosques 6.2 Number of Churches 6.3 Number of Multipurpose Buildings 6.4 Number of Facilities/Sports Fields
7.	Agribusiness Supporting Facilities	7.1 Number of agricultural extension centers (BPP)

Source : modified from Adiputra (2021) and analysis results

It is assuming that the weights of each facility are not the same, the processing of facility data using the weighted scalogram method. The weight used is the ratio between the total number of facilities and the number of regional units that have these facilities. By multiplying the weight and the primary data matrix, a weighted value of a certain type of facility will be obtained. The weight of the index is calculated by the formulation:

$$I_{ij} = \frac{X_{ij} n}{X_j a_j}$$

Where:
i : 1,2……,n Number of Regions (Urban Village)
j : 1,2……,n the sum of all variable characteristics j

After that, the regional development index is carried out with the following formulation:

$$K_{ij} = \frac{I_j - \min (I)_j}{s_j}$$

Where:
K_{ij} : The default value of the hierarchy index for the i-th village/kelurahan and the j-th characteristic,
I_{ij} : The weight value of the characterization index for the i-th village /kelurahan and the j-th characteristic,
$\min (I)_j$: The minimum value of the index on the j-th characteristic,
S_j : Standard deviation value

The Regional/Urban Village Development Index (IPK) values are then arranged in hierarchical order from highest to lowest values. The assumption of hierarchy determination follows the normal spread as follows :

- Region Hierarchy I (high level of development) is a region whose default index amount value is greater than the average value plus the standard deviation or (IPK > (St. Dev. + Average))
- Region Hierarchy II is a region with a hierarchical index value at least equal to its index average value (IPK >= Average).
- Region Hierarchy III is a regions with a hierarchical index value less than the average value of the index across regions or (IPK < Average).

Identification of Village Development Index (IPK) Value between Slums Correlations aims to find out how much is related or related between a variable and other variables. The correlation analysis in this study was carried out to determine the relationship between the IPK value and slums, in this case, the percentage of slum area.

According to Supranto (1984) in [8], the statistical value that measures the strength of the relationship between X and Y is called the correlation coefficient. The value of the correlation coefficient ranges from - 1 < r < 1. A negative value indicates that the direction of the relationship is negative (the value of X decreases while the value of Y rises or vice versa). It is positive if it indicates a positive relationship direction (the value of X rises followed by an increase in Y or vice versa). The correlation coefficient value relationship is :

r = 0 : X and Y are not correlated
< 0,5 : X and Y relationship is weak positive or negative
0,5 < 0,75 : X and Y relationship is quite strong positive or negative
0,75 < 0,9 : X and Y relationship is strong positive or negative
0,9 < 1 : X and Y relationship is very strong positive or negative
= 1 : X and Y relationship is perfectly positive or negative

4. Results and Discussions

Urban Village Development Index (IPK) and Regional Hierarchy

Analysis of the relationship between regional development level and the existence of slums in Sidenreng Rappang Regency is carried out by first determining the level of regional development. The level of development of the region is based on the level of development and the capacity of services that can be provided in an area.

A vast territory can have several cores with a certain hierarchy (order). The Hierarchy needs to be considered in regional planning because it concerns the functions you want to direct to each region. A region can be centered (cores) or supporting regions (hinterlands). The method used to determine the hierarchy of regions is a scalogram. This method identifies the central hierarchy of public facilities that an urban village/village has. The identification and grouping or sorting carried out is based on the level of completeness of existing facilities in urban villages/villages and comparing them with other urban villages/villages.

Variables used to determine the hierarchy of the territory include population variables, the number of public facilities, and the accessibility of regional units. The level of regional development in the scalogram analysis is reflected in the value of the Village Development Index (IPK). The higher the IPK value of an area means that the region is growing and more able to provide services to the surrounding areas. The variables used to determine the hierarchy of villages/urban villages are population variables (population), types of public facilities (economic, educational, health, and social facilities), and accessibility of regional units (distance and travel time). The following is the value of the Urban Village Development Index (IPK) in Sidenreng Rappang Regency based on the results of the scalogram analysis:

Table 2 - An Urban Village Development Index (IPK) in Sidenreng Rappang Regency

No	Disctrict	Village/Urban Village	IPK	Hierarchy
1	Maritengngae	Takkalasi	14,05	Hierarchy III
		Allakuang	17,63	Hierarchy III
		Tanete	16,52	Hierarchy III
		Lautang Benteng	29,24	Hierarchy II
		Rijang Pittu	44,87	Hierarchy I
		Lakessi	31,45	Hierarchy II
		Pangkajene	107,85	Hierarchy I
		Wala	22,25	Hierarchy II
		Majjelling	40,15	Hierarchy I
		Majjelling Wattang	23,43	Hierarchy II
		Sereang	18,69	Hierarchy III
		Kanie	25,00	Hierarchy II
2	Watang Pulu	Mattirotasi	16,37	Hierarchy III
		BuaE	12,80	Hierarchy III
		Lainungan	7,30	Hierarchy III
		Lawawoi	19,45	Hierarchy III
		Bangkai	14,68	Hierarchy III
		Uluale	12,81	Hierarchy III
		Arawa	14,06	Hierarchy III
		Batulappa	14,34	Hierarchy III
		Ciro-ciroe	24,83	Hierarchy II
		Carawali	21,63	Hierarchy II

No	Disctrict	Village/Urban Village	IPK	Hierarchy
3	Baranti	Manisa	20,70	Hierarchy III
		Panreng	15,81	Hierarchy III
		Benteng	16,82	Hierarchy III
		Baranti	25,83	Hierarchy II
		Sipodeceng	11,83	Hierarchy III
		Passeno	23,12	Hierarchy II
		Duampanua	19,29	Hierarchy III
		Tonrongnge	23,42	Hierarchy II
		Tonrong Rijang	13,96	Hierarchy III
4	Watang Sidenreng	Kanyuara	9,78	Hierarchy III
		Sidenreng	17,83	Hierarchy III
		Empagae	29,87	Hierarchy II
		Mojong	14,81	Hierarchy III
		Talumae	22,22	Hierarchy II
		Aka akae	20,04	Hierarchy III
		Damai	19,60	Hierarchy III
		Talawe	16,25	Hierarchy III
5	Dua Pitue	Padangloang	14,78	Hierarchy III
		Padangloang Alau	19,08	Hierarchy III
		Tanru tedong	32,14	Hierarchy II
		Salomallori	30,69	Hierarchy II
		Kalosi	15,73	Hierarchy III
		Kalosi Alau	13,96	Hierarchy III
		Taccimpo	15,88	Hierarchy III
		Salobukkang	28,67	Hierarchy II
		Bila	14,55	Hierarchy III
		Kampale	13,50	Hierarchy III
6	Panca Rijang	Kadidi	22,40	Hierarchy II
		Macorawalie	22,53	Hierarchy II
		Timoreng Panua	14,06	Hierarchy III
		Cipotakari	17,47	Hierarchy III
		Bulo	15,35	Hierarchy III
		Bulo Wattang	19,96	Hierarchy III
		Lalebata	33,00	Hierarchy I
		Rappang	50,08	Hierarchy I
7	PancaLautang	Cenrana	22,71	Hierarchy II
		Bapangi	16,74	Hierarchy III
		Wanio Timoreng	17,02	Hierarchy III
		Wanio	37,16	Hierarchy I
		Bilokka	25,59	Hierarchy II
		Corawali	31,50	Hierarchy II
		Lise	17,80	Hierarchy III
		Alesalewo	23,40	Hierarchy II
		Lajonga	18,85	Hierarchy III

No	Disctrict	Village/Urban Village	IPK	Hierarchy
		Wette'e	26,43	Hierarchy II
		Teppo	13,52	Hierarchy III
8	Tellu Limpoe	Massepe	14,84	Hierarchy III
		Pajalele	12,10	Hierarchy III
		Baula	9,05	Hierarchy III
		Teteaji	17,61	Hierarchy III
		Polewali	16,83	Hierarchy III
		Toddang Pulu	12,46	Hierarchy III
		Amparita	31,93	Hierarchy II
		Arateng	15,41	Hierarchy III
9	Pitu Riawa	Ponrangae	16,23	Hierarchy III
		Lancirang	27,03	Hierarchy II
		Sumpang Mango	16,71	Hierarchy III
		Lasiwala	26,45	Hierarchy II
		Ajubissue	13,81	Hierarchy III
		Dongi	42,50	Hierarchy I
		Otting	16,62	Hierarchy III
		Anabanna	20,20	Hierarchy III
		Bulucenrana	15,62	Hierarchy III
		Betao	28,38	Hierarchy II
		Betao Riase	23,48	Hierarchy II
		Kalempang	31,54	Hierarchy II
10	Pitu Riase	Bola Bulu	15,51	Hierarchy III
		Botto	16,69	Hierarchy III
		Bila Riase	15,31	Hierarchy III
		Lagading	26,71	Hierarchy II
		Batu	26,62	Hierarchy II
		Compong	20,37	Hierarchy III
		Tana Toro	22,32	Hierarchy II
		Leppangeng	25,60	Hierarchy II
		Lombo	25,65	Hierarchy II
		Dengeng-dengeng	10,78	Hierarchy III
		Buntu Buangin	17,97	Hierarchy III
		Belawae	24,06	Hierarchy II
11	Kulo	Mario	14,34	Hierarchy III
		Rijang Panua	16,34	Hierarchy III
		Kulo	25,76	Hierarchy II
		Abbokongeng	16,05	Hierarchy III
		Maddenra	11,76	Hierarchy III
		Bina Baru	13,24	Hierarchy III

Source : Author's Processed Results, 2022

Based on the results of the scalogram analysis in the table, it can be seen that the IPK value in Sidenreng Rappang Regency ranges from 7.30 – 107.8. The hierarchy I have an IPK of 33.00 – 107.85 and consists of 7 villages/urban villages. Then the IPK value in Hierarchy II ranges from

21.63 – 32.14 and there are 35 villages/ urban villages that are included in this hierarchy. Another 64 villages/ urban villages with an IPK range of 7.30 – 20.70 are in hierarchy III. In Table II.7, Pangkajene Village, Maritengngae District has the highest IPK and is in Hierarchy I while Lainungan Village, Watang Pulu District with a IPK of 7.30 is in Hierarchy III.

The hierarchical grouping of regions by number and type of facilities is more clearly outlined as follows (Table 3):

Table 3 - Number and percentage of villages/kelurahan based on hierarchy in Sidenreng Rappang Regency

IPK Value	Number of Village/Urban Village	Percentage (%)	Hierarchy
33,00 – 107,85	7	7%	Hierarchy I
21,63 – 32,14	35	33%	Hierarchy II
7,30 – 20,70	64	60%	Hierarchy III

Source : Author's Analysis Results, 2022

1. Hierarchy I is a village /urban village that has an IPK value greater than the average value plus standard deviation or in other words has the highest level of development. Based on the calculation of the scalogram analysis, as many as 7 villages/urban villages or about 7% of the total number of villages/urban villages in Sidenreng Rappang Regency. Villages/urban villages that are included in this hierarchy generally have complete and more adequate service facilities than other villages/urban villages. These villages are able to provide services to other villages around them and almost all of them are centers of activity and government in their respective sub-districts, villages / urban villages that are included in the hierarchy I are Pangkajene Village, Rappang Village, Rijang Pittu Village, Dongi Village, Majjelling Village, Wanio Village, and Lalebata Village
2. Hierarchy II is a village /urban village with a hierarchy index value at least equal to the average value of the index or can be said to have a moderate level of development. There are 35 villages/urban villages in Sidenreng Rappang Regency which are included in this hierarchy II or about 33% of the total villages/urban villages. Villages/urban villages hierarchy II is found in all sub-districts (11 sub-districts) in Sidenreng Rappang Regency. This can be interpreted to mean that the distribution of facilities and services is quite evenly distributed in Sidenreng Rappang Regency even though the villages /urban villages in hierarchy II of service facilities are relatively low from hierarchy I. Some of the villages/urban villages included in this hierarchy are Mejjelling Wattang Village, Lakessi Village, Baranti Village, Passeno Village, Empagae Village, Tanru Tedong Village, Kadidi Village, Bilokka Village, Corawali Village, Ampitera Village, Lancirang Village, Lasiwala Village, Kalempang Village, Batu Village, Lagading Village, and Kulo Village and 19 other villages/urban villages.
3. Hierarchy III is a village/urban village with a hierarchy index less than the average index value in all areas of Sidenreng Rappang Regency or can be said to have the lowest level of development. Based on the results of the scalogram analysis, this hierarchy group has the highest number, reaching 64 villages/urban villages or about 60% of the total villages/urban villages. The villages have relatively lacking service facilities and are located far from the centers of activity in their respective sub-districts and adjacent sub-districts. Some of the villages/urban villages included in hierarchy 3 are Takkalasi Village, Lainungan Village, Sipodeceng Village, Kanyuara Village, Toddang Pulu Village, Kampale Village, Timoreng Panua Village, Bapangi Village, Baula Village, Ajubissue Village, Dengeng-dengeng Village, Maddenra Village, and 54 other villages/urban villages.

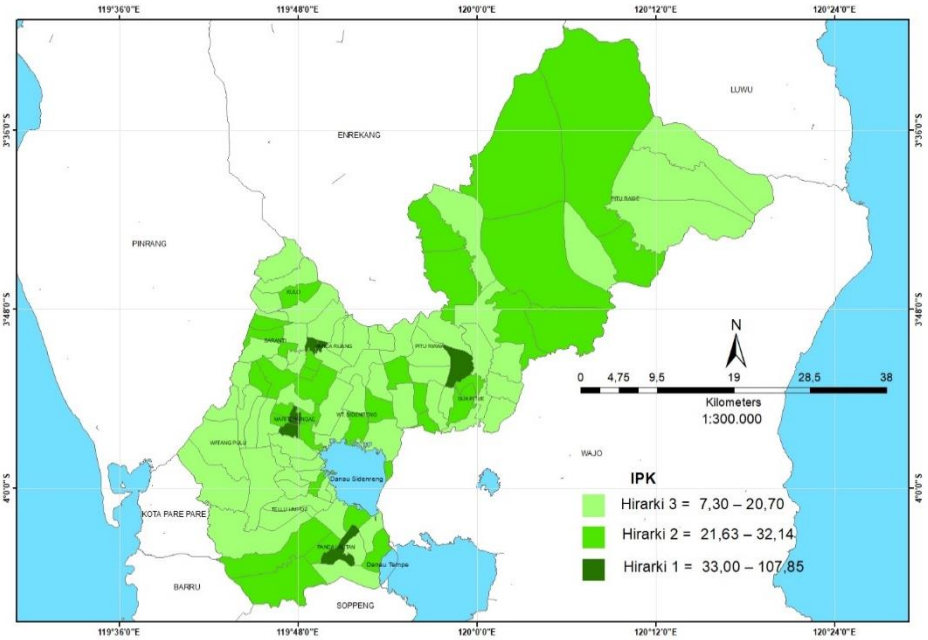

Fig 1. The Thematic Map of An Urban Village Development Index (IPK) in Sidenreng Rappang Regency

In figure 1, you can see the distribution of the hierarchy of village / urban village areas in Sidenreng Rappang Regency. The village /urban village located in hierarchy 1 is the capital of the sub-district has a strategic location and is a center for trade and services so that it has complete public facilities (social, economic, and educational). Such as Rijang Pittu Village, Pangkajene and Majjelling Villages in Maritengngae District and Rappang Village and Lalebata Village in Panca Rijang District.

Identification of Correlation between Urban Village Development Index (IPK) Value and Slums

The analysis conducted to illustrate the relationship between the level of development of the area and the slums first looked at the comparison of the average IPK values, the area of slums and the average area of slums, and the average percentage of slum areas based on the grouping of village / urban village hierarchy (see table 4)

Table 4 - An Area and Slum Area's Average
based on Village/Kelurahan Hierarchy Grouping and IPK's average

	Average of IPK	Slum Area (Ha)	Average of Slum Area (Ha)	Average Slum Area Percentage (%)
Hierarchy I	50,80	49,74	7,11	2,85
Hierarchy II	26,11	234,17	6,69	1,41
Hierarchy III	15,62	310,43	4,85	0,87

Source : Author's Analysis Results,2022

To find out how strong the relationship between the levels of development of the region is, a correlation analysis is carried out. Correlation analysis in this case simple correlation is used to find out how big the relationship between a variable and other variables is. This study was conducted to determine the relationship between the Urban Village Development Index (IPK) and the percentage of slum areas in the Sidenreng Rappang Regency. The statistical value that measures the strength of the relationship between X and Y is called the correlation coefficient. A negative value indicates that the direction of the relationship is negative (the value of X decreases

while the value of Y increases or vice versa). It is positive if it indicates the direction of a positive relationship (the value of X rises followed by an increase in Y or vice versa). Whereas, if the correlation coefficient is close to zero then it is declared uncorrelated (Supranto dalam (Adiputra, 2021))

Based on the results of the correlation analysis that has been carried out, shows that the relationship between the Village Development Index (IPK) and the percentage of slum area is not correlated. The following is presented in Table 5 of the results of the correlation analysis of the Urban Village Development Index (IPK) and the percentage of slum areas.

Table 5 - The results of the correlation analysis of the Urban Village Development Index (IPK) and the percentage of slum area in Sidenreng Regency

Correlations

		IPK	Slum Area (Ha)
IPK	Pearson Correlation	1	,132
	Sig. (1-tailed)		,089
	N	106	106
slum area	Pearson Correlation	,132	1
	Sig. (1-tailed)	,089	
	N	106	106

Source : Author's Analysis Results, 2022

From Table 5, it can be seen that there is no significant correlation between the variable value of the Urban Village Development Index (IPK) and the percentage of slum areas. Where the value of sig.0.089 > 0.01 and has a positive weak relationship or less meaningful relationship strength as seen from the Pearson correlation value < 0.5 which is 0.013. So it can be said that the higher the value of the Urban Village Development Index (IPK) or the more complete and diverse the public facilities available in a village / urban village will not guarantee a reduction in the area of slums in a village / urban village.

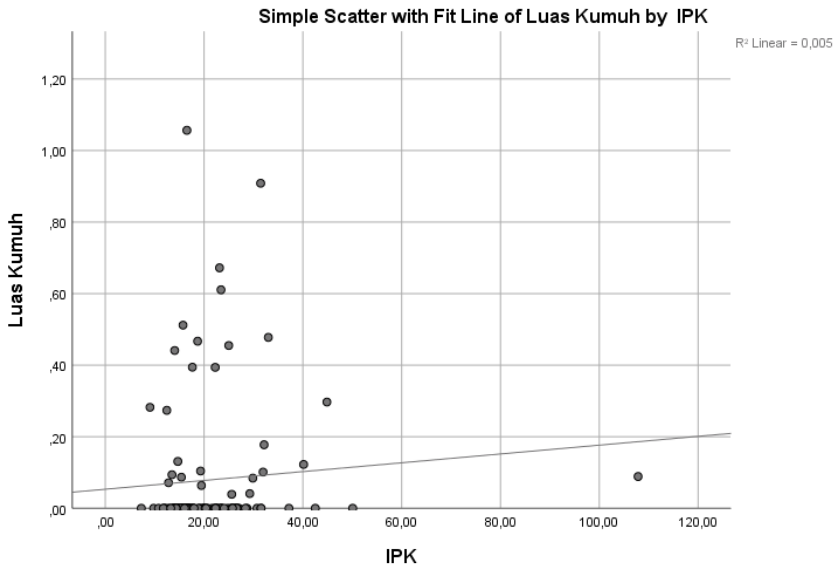

Fig 2. Scatterplot correlation IPK value and slum areas percentage

Figure 2 shows the clustered points not following a straight line with a positive slope. This shows that the value of the Village Development Index (IPK) is inversely proportional to the percentage of the slum area. The positive relationship between the value of the Village Development Index (IPK) and the percentage of slum area can be interpreted as the higher the development of a village/urban village, the higher the area of the slum. However, as previously explained that there is no significant correlation between the two variables.

The new thing that is different aspect of this study is the development of areas that are variables that are thought to affect the growth of slums in terms of the potential of the area as an agribusiness center which has never been done in previous studies. The results of this study stated that the level of development of the territory was not correlated with the development of slums in the region. Based on another point of view, the results of the study (Adiputra et al., 2022) state that the higher an IPK value or the more complete and diverse the public facilities available in a village /urban village that develops as a buffer for the capital, it will not guarantee a reduction in the area of slums.

The high economic activity and population mobility in Sidenreng Rappang Regency and the growth of service centers in agricultural production areas at the village level are not related to the development of pockets of informal settlements around it. This is in contrast to the results of research (Annisa Amalia, 2018) (Wijayanti et al., 2020) (Ardiansyah & Wagistina, 2021) which states that areas with more complete urban facilities and infrastructure will attract migrants to work and settle. The existence of economic centers makes it easier for migrants to find a livelihood and tend to choose to house close to their place of work even though the housing is not feasible so the level of regional development is directly proportional to the increase in the percentage of slum families.

5. Conclusion

The results showed that the value of the Village Development Index in Sidenreng Rappang Regency ranged from 7.30 – 107.8. Pangkajene Urban Village, Maritengngae District has the highest IPK and is in Hierarchy I. Pangkajene Village has complete and more adequate service facilities such as education, health, trade, and services as well as transportation. Pangkajene village is a center of social, economic, and government activities that provide services to other villages / urban villages around it. Lainungan Village, Watang Pulu District with an IPK of 7.30 is in hierarchy III which has a relatively lacking service facilities and is located far from the center of activity in the Wattang Pulu district area. Lainungan Village is an area directly adjacent to Pare-pare City. Based on the results of a simple correlation analysis that has been carried out, show that the value of the Urban Village Development Index (IPK) is inversely proportional to the percentage of the slum area. It can be concluded that there is no correlation or no relationship between the Urban Village Development Index (IPK) variable and the slum area percentage variable. The higher an IPK value or the more complete and diverse the supporting facilities available in a village / urban village that develops as an agribusiness center will not guarantee a reduction in the area of slums. Based on the results of the study, it is recommended that further studies be carried out related to the various determinants of slums in Sidenreng Rappang Regency to determine a more appropriate handling strategy.

References

Adiputra, M. S. (2021). *Strategi Penanganan Permukiman Kumuh di Kabupaten Tangerang Berdasarkan Keragaman Spasial Faktor yang Mempengaruhinya*. Institut Pertanian Bogor.

Adiputra, M. S., Rustiadi, E., & Pravitasari, A. E. (2022). Pola Sebaran Permukiman Kumuh di Kabupaten Tangerang dan Keragaman Spasial Faktor yang Mempengaruhinya. *Journal of Regional and Rural Development Planning*, *6*(2), 146–164. https://doi.org/10.29244/jp2wd.2022.6.2.146-164

Akil, A., Yudono, A., Wahyuni, S., Ramadhani, R., & Kamaruddin, I. (2020). Relationship between Regional Development Level and Accessibility Index in Makassar Coastal Area. *IOP Conference Series: Materials Science and Engineering*, *875*(1), 0–11. https://doi.org/10.1088/1757-899X/875/1/012013

Annisa Amalia, A. (2018). Karakteristik Hunian Permukiman Kumuh Kampung Sapiria Kelurahan Lembo Kota Makassar. *Nature : National Academic Journal of Architecture*, *5*(1), 13–22. https://doi.org/10.24252/nature.v5i1a2

Ardiansyah, I., & Wagistina, S. (2021). Pola Spasial dan Keputusan Keluarga Bermukim di Permukiman Kumuh Pusat Kota dan Wilayah Pinggiran Kota Malang, Jawa Timur.

Majalah Geografi Indonesia, *35*(1), 64. https://doi.org/10.22146/mgi.62192

Caschili, S., De Montis, A., & Trogu, D. (2015). Accessibility and rurality indicators for regional development. *Computers, Environment and Urban Systems*, *49*, 98–114. https://doi.org/10.1016/j.compenvurbsys.2014.05.005

CNN Indonesia. (2019). *Kawasan Kumuh Indonesia Meluas Dua Kali Lipat*. https://www.cnnindonesia.com/nasional/20190903212554-20-427289/kawasan-kumuh-indonesia-meluas-dua-kali-lipat

DJCK Kementrian PUPR. (2020). *Rencana Strategis Dirjen Cipta Karya Kementerian Pekerjaan Umum dan Perumahan Rakyat 2020 - 2024*.

Firdaus, G. (2012). Urbanisation, emerging slums and increasing health problems: a challenge before the nation: an empirical study with reference to state of uttar Pradesh in Nigeria. *E3 Journal of Environmental Research and Management*, *3*(9), 0146–0152.

Kaseke, D. . ., Pakasi, C. B. D., & Ngangi, C. R. (2017). Analisis Perencanaan Pola Penanganan Permukiman Kumuh Di Kawasan Sindulang Satu, Kecamatan Tuminting, Kota Manado. *Agri-Sosioekonomi*, *13*(1A), 101. https://doi.org/10.35791/agrsosek.13.1a.2017.15156

Kotaku. (2022). *Capaian Penanganan Kumuh Program KOTAKU Tahun 2021 Provinsi Sulawesi Selatan*.

Lavrinenko, P. A., Romashina, A. A., Stepanov, P. S., & Chistyakov, P. A. (2019). Transport Accessibility as an Indicator of Regional Development. *Studies on Russian Economic Development*, *30*(6), 694–701. https://doi.org/10.1134/S1075700719060091

Liu, R., Chen, Y., Wu, J., Xu, T., Gao, L., & Zhao, X. (2018). Mapping spatial accessibility of public transportation network in an urban area – A case study of Shanghai Hongqiao Transportation Hub. *Transportation Research Part D: Transport and Environment*, *59*, 478–495. https://doi.org/10.1016/j.trd.2018.01.003

Marasabessy, F. (2016). Hirarki Wilayah Kota Ternate Pasca Pengembangan Kawasan Waterfront City. *Jurnal Wilayah Dan Lingkungan*, *4*(3), 213. https://doi.org/10.14710/jwl.4.3.213-224

Ooi, G. L., & Phua, K. H. (2007). Urbanization and slum formation. *Journal of Urban Health*, *84*(SUPPL. 1), 27–34. https://doi.org/10.1007/s11524-007-9167-5

Panuju, D. R., & Rustiadi, E. (2013). Teknik Analisis Perencanaan Pengembangan Wilayah. *Bogor: Lab. Pengembangan Wilayah, Departemen Ilmu Tanah Dan Sumberdaya Lahan, Institut Pertanian Bogor*.

Pemkab Sidenreng Rappang. (2014). *Surat Keputusan (SK) Bupati Sidrap Nomor 243/ VI/ 2014 tentang Penetapan Lokasi Permukiman Kumuh di Kabupaten Sidenreng Rappang*.

Pemkab Sidenreng Rappang. (2020). *SK Bupati Sidenreng Rappang Nomor 362/XI/2020 tentang Perubahan atas Keputusan Bupati Sidenreng Rappang Nomor 179/I/2020 tentang Penetapan Lokasi Perumahan Kumuh dan Permukiman Kumuh di Kabupaten Sidenreng Rappang*.

Pontoh, N. K., & Kustiwan, I. (2009). *Pengantar perencanaan perkotaan*. ITB.

Prihatin, R. B. (2015). ALIH FUNGSI LAHAN DI PERKOTAAN(STUDI KASUS DI KOTA BANDUNG DAN YOGYAKARTA)Urban Land Misuse: (A Case Study of Bandung City and Yogyakarta City). *Aspirasi*, *6*(2), 107–107.

Rusman, R. (2019). *EVALUASI IMPLEMENTASI KEBIJAKAN KAMPUNG PELANGI (Studi Kasus: Kampung Wonosari RW 3 Dan 4 Kelurahan Randusari, Kecamatan Semarang Selatan, Kota Semarang)*. Universitas Islam Sultan Agung Semarang.

Rustiadi, E., Saefulhakim, S., & Panuju, D. R. (2018). *Perencanaan dan Pengembangan Wilayah*. Crespent Press dan Yayasan Pustaka Obor Indonesia.

Sitorus, S. R. P., Ashri, M., & Panuju, D. R. (2013). Analisis Ketersediaan Ruang Terbuka Hijau Dan Tingkat Perkembangan Wilayah Di Kota Cimahi, Provinsi Jawa Barat. *Jurnal Ilmu Tanah Dan Lingkungan*, *15*(2), 66. https://doi.org/10.29244/jitl.15.2.66-75

United Nations. (2016). Urbanization and Development: Emerging Futures. In *World Cities report 2016*. https://doi.org/10.1097/NCM.0000000000000166

United Nations. (2020). *Unpacking the Value of Sustainable Urbanization*. https://doi.org/10.18356/c41ab67e-en

Wijayanti, R. (2019). *Identifikasi pola sebaran spasial permukiman kumuh dan arahan*

penanganannya di Kota Bekasi. Institut Pertanian Bogor.

Wijayanti, R., Sutandi, A., & Pravitasari, A. E. (2020). Identifikasi Spasial Faktor-Faktor yang Mempengaruhi Permukiman Kumuh di Kota Bekasi. *Tataloka*, *22*(4), 573–585. https://doi.org/10.14710/tataloka.22.4.573-585

Woo, B., & Jun, H. J. (2020). Globalization and slums: How do economic, political, and social globalization affect slum prevalence? *Habitat International*, *98*(February), 102152. https://doi.org/10.1016/j.habitatint.2020.102152

Yasir, M. (2016). *"Kontribusi Sektor Unggulan Tanaman Pangan Terhadap Peningkatan Ekonomi Wilayah Kecamatan Watang Sidenreng Kabupaten Sidenreng Rappang*.

Yin, C., He, Q., Liu, Y., Chen, W., & Gao, Y. (2018). Inequality of public health and its role in spatial accessibility to medical facilities in China. *Applied Geography*, *92*(December 2016), 50–62. https://doi.org/10.1016/j.apgeog.2018.01.011