Migration Letters

Volume: 20, No: 8, pp. 1158-1172

ISSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)

www.migrationletters.com

Model of the Sustainability Status of Industry Area Development in the Routa Area of Konawe Regency, Southeast Sulawesi

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Abstract

This study aims to describe the model of spatial dynamics of industrial areas in the Konawe Regency Routa region, Southeast Sulawesi. The sampling technique uses a purposive sampling technique. Where according to Sugiyono (2012), purposive sampling is a technique of determining the sample selected is the sample that is in the area intended for development of around 3700 Ha area.

Results: The status of the sustainability of industrial area development in the Routa area of Konawe Regency, Southeast Sulawesi, as an industrial area development area, the status of the sustainability of industrial area development in the Routa area of Konawe Regency, Southeast Sulawesi must be a major concern. This sustainability status must be monitored and evaluated regularly to ensure that the development of industrial estates is sustainable and does not damage the surrounding environment. Its sustainability status includes several things, namely: Environmental conservation, Waste management, Social aspects, Development of green infrastructure, Community involvement. By taking into account these factors, it is hoped that the status of the sustainability of industrial estate development in the Routa region of Konawe Regency, Southeast Sulawesi can be maintained and continues to increase.

Keywords: *Sustainability Status, Industrial Area.*

INTRODUCTION

The development of the industrial sector in Indonesia is an important sector as a driving force for the country's economic growth. According to data from the Ministry of Industry and BKPM, so that in 2018 the industrial sector has contributed more than 25% to KDNK (Output in Rough Country) with a total of 87 industrial areas that have been operating with an area of 86.8 thousand hectares and more than 9,000 manufacturing companies. Meanwhile, industrial processes that have been managed conventionally by depending on the exploitation of natural resources and technological advances have been recognized globally as one of the potential causes of various natural problems around ecology (Sujiman, 2018).

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To anticipate negative impacts on environmental sustainability due to the rapid development of industry in the world, a strategy is needed to align economic growth with the protection of natural resources and ecology, which is known as the green industry concept. According to Fleigh (2010), a green industrial park (green industrial park) is a collection of factories/industries that apply clean production technology, treat their industrial waste and/or reduce greenhouse gas emissions in the area where the industry operates. In addition, the concept of an eco-industrial park (EIP) was also developed, which is an industrial area concept implemented by integrating economic, social and ecological interests.(Lowe, 2015).

One of the basic concepts of EIP development and implementation adopted by many industrial estates in several developed countries is the concept formulated by Ernest Lowe (2015) in the eco-industrial park handbook based on the conception of industrial ecology (industrial ecology), namely industrial areas that pay attention to several aspects; (1) integration of natural systems with the suitability of the carrying capacity of the environment; (2) sustainable use of energy and water; (3) integration of production and waste material flows; (4) effective management of industrial estates; (5) environmentally friendly infrastructure design; and (6) integration between industrial estates and social communities and contributions to local economic development (Tessitore, etc., 2015).

In line with the development of the concept of industrial ecology, it has been implemented in several developing countries since the 2000s (Swantomo, et al.(2010). This can be seen from the growth of many industrial zones and or new industrial areas. However, the growth has not been significant due to several factors, including: (1) natural resources can still support production and some of them also receive subsidies; (2) The cost of providing raw materials is cheaper than the costs for the material recycling process; (3) law enforcement on waste disposal or pollution has not been maximized; and (4) the public/consumers who are still permissive towards production or products that have the potential to damage the environment. So that most of the existing industrial areas are only a collection of industrial areas that stand alone and do not have a relationship as a system.

Furthermore, from the aspect of sustainable spatial planning, the industrial area is also not fully in accordance with the technical standards specified in the regulations. The pattern of space utilization in industrial areas around Routes has not been carried out systematically and several other industrial areas show that the composition of green open space is still below 30% of the total land area and the availability of waste minimization infrastructure is still not optimal. This not only has an impact on the beauty and beauty of the environment in industrial areas, but also reduces the area's ability to protect/normalize the potential hazards of waste/pollution generated by industrial activities.

Routa Konawe Regency, Southeast Sulawesi Province is one of the areas of strategic industrial growth which is currently increasing significantly, where it was recorded in December 2020, Routa which became a mining industrial area, the number of investments increased sharply from the set target. Investment and PTSP show that the realization of the target of IDR 6 trillion has reached IDR 8 trillion or 100 percent more.

The Routa area has a lot of development potential where the Routa is bordered to the north by Torukuno (mountain ridge) Lasampala; In the east it is bordered by the Lalindu Wataraki River; To the south it is bordered by Mount Hiuka, and; To the west it is bordered by Lake Towuti. Torukuno Lasampala is a mountainous complex that forms a barrier between the Route and Bungku areas as well as a dividing area between Southeast Sulawesi Province and Central Sulawesi Province. Torukuno Lasampala and the natural environment of Routa in general have a fairly high level of diversity and density of vegetation. Various types of wood, rattan and resin grow in this area. Some types of wood found in forest areas include china-cina, deco-deko, kumea, mango-mango, ra'u, damadere, resin, upi.

METHOD

The aim of this studydescribes modeling the status of the sustainability of industrial area development in the route area of Konawe Regency, Southeast Sulawesi. The sampling technique uses a purposive sampling technique. Where according to Sugiyono (2012), purposive sampling is a technique of determining the sample selected is the sample that is in the area intended for development of around 3700 Ha area.

RESULTS AND DISCUSSION

Efforts to design environmentally friendly industrial activities have started along with the development of the concept of sustainable development as defined by Fleigh (2000) and Lowe (2001) in the form of a green industrial park (green industrial park), namely a collection of factories/industries that apply clean production technology, processing industrial waste and/or reducing greenhouse gas emissions in the area where the industry operates. In addition, the concept of a sustainable industrial area (eco-industrial park/EIP) is also being developed, namely the concept of an industrial area which is implemented by integrating economic, socio-cultural and ecological interests.

Determination of the value for each attribute is based on the existing conditions of the research object. Determining the value of each attribute is obtained from the results of an analysis of each of these attributes with an ordinal scale (Likert scale). In this study, scoring for each attribute is used on an ordinal scale of 3 (poor/low), 2 (moderate/adequate) and 1 (good/maximum) for each criterion of the attribute, which means that the smaller the scale, the attribute supports the development of sustainable industrial areas. . The criteria for determining the value of each attribute are determined based on triangulation data or "scientific judgment" according to the conditions of each attribute. All data from the assessment of the attributes in this study from industrial area respondents (KI) was then performed using a Multidimensional Scaling analysis to determine a point that reflects the position of the sustainability of industrial area development towards two main reference points, namely good points and bad points. One of the stages that must be carried out is to determine the criteria for each attribute on the basis of theory, regulation, basis of comparison or normative assessment of the appropriate conditions between the attributes and the factual conditions. The evaluation criteria for each indicator will serve as a guide for stakeholders or experts who are part of the respondents from the study as a summary of the results described in Table 1.

Based on the identification of sustainability indicators formulated from literature studies and the results of several previous studies mentioned in Table 1, there were 51 attributes/indicators distributed in 4 dimensions. Furthermore, based on filling out the questionnaire to 30 respondents, it can be used to become 50 indicators of sustainability while formulating scoring criteria for each of these indicators as described in Table 1. Meanwhile, to identify and evaluate the existing condition of the research indicators, data triangulation is carried out, namely; (a) secondary data from offices/agencies, reports and research results; (b) assessment of competent experts and stakeholders through questionnaires and structured interviews; and (c) observation of factual field data.

Table 1. Recapitulation of Criteria for Assessment Results of Industrial Estate Sustainability Indicator Scores

Dimensions/Indicators	Criteria and Score		Industrial area	
	Good	Currently	Factual Conditions	Score
1. Ecology				
a. Spatial planning	≥68%	36% is	Just Appropriate	2

		sufficient		
b. Ecosystem Integration	80% Compliant	36% is sufficient	In accordance	1
c. Energy Efficiency	74% A lot	34% limited	Lots	1
d. Waste Minimization	75% Good	30% less	Pretty good	2
2. Economy				
a. Profitability Level	78% Good	30% less	Good	1
b. Prosperity level	88% Good	47% is sufficient	Good	1
c. Economic Multipliers	77% Good	27% less	Average	2
d. Production Support Factors	79% Good	34% is sufficient	Good	1
3. Socio-Cultural				
a. Jobs	91% A lot	54% Enough	Good	1
b. Quality of Life	78% Good	20% Less	Average	2
c. Community empowerment	79% Active	27% Less	Average	2
d. Social Stability	76% Good	20% Less	Average	2
4. Management & Institutions				
a. Management Management	94% Highly Effective	70% Good	Good	1
b. Performance Monitoring	83% Effective	34% Enough	Average	2
c. Institution/stakeholder cooperation	72% Effective	20% Less	Average	2
d. Government policy	72%Yes/functional	27%less	Less/not yet	1

Source: Analysis Results, 2023

a. Analysis of Sustainability Index and Leverage Indicators

The stages of assessing the sustainability index for the development of industrial estates in the industrial area of the ROuta region, Konawe Regency, Southeast Sulawesi use the Multidimensional Scaling method. The principle of the application of this analytical tool is based on the SPSS program with an MDS-based settlement approach with a rating scale of 0 (bad) to 100 (good). If the condition of the object under study has an index value of more than 75% then the management of the area is included in the sustainable category and vice versa if less than 75% is categorized as quite sustainable, less than 50% is in the category of less sustainable, and less than 25% is not sustainable (Kavanagh and Pitcher, 2001). Sustainability index value intervals in the 4 levels of sustainability status are shown in Table 2 as follows:

Table 2. Index Value and Sustainability Status Category

No	Value Index	Sustainability Status
1	0.00 - 25.00	Not sustainable
2	25.01 - 50.00	Less sustainable
3	50.01 - 75.00	Sufficiently sustainable

4	75.01 - 100.00	Sustainable

Source: Suwarno, et al., 2011

After obtaining the sustainability index for each dimension and illustrating the shape of a kite diagram, the next process is to complete the selection of attribute/indicator data that affect the level of sustainability using leverage analysis as indicated by the Root Mean Square (RMS) value. The greater the change in the RMS value, the more sensitive is the role of this attribute in improving the sustainability status of industrial management. Determination of the leverage factor is obtained from the attribute that has the highest value up to half the value of each dimension.

Meanwhile, to estimate the random error rate in the resulting model for all dimensions at a 95% confidence level, Monte Carlo analysis is used which is an integral part of the MDS analysis series (Suwarno et. al, 2011)

The level of validity of this analysis can be known by the indicator value of stress (S) and R-square (R2). The smaller the stress value (<25%) the better the accuracy, as well as the R2 value which is close to 1. According to Kavanagh (2001) the effect of error will appear in the MDS analysis caused by various things such as errors in scoring because misunderstanding of the attributes or conditions of the research location that are not perfect, variations in values due to differences in opinions or assessments by researchers, the MDS analysis process is repeated, data entry errors or missing data.

1) Ecological Dimension Sustainability Index

The ecological dimension of industrial estate companies consists of 4 attributes, namely; spatial planning, ecosystem integration, energy efficiency, and waste minimization after the MDS analysis was carried out in terms of the S-stress and RSQ values with the category of feasibility assessment based on S-stress was 0.11261 or 1.12%, which means that the model has good feasibility (fit). Thus, the RSQ value is quite low, namely 0.58639 (58.63%), where the RSQ interpretation value is the same as R-square in linear regression.

The results of this analysis illustrate that the data used is sufficient and all indicators of the sustainability of industrial and non-industrial areas analyzed are accurate enough so that the final results of the research can be accounted for.

Table 3. Stress Value and Determination Coefficient (R2)

Parameter	Sustainability Dimension
stress	0.11261
R2	0.58639
Iteration	4

Source: Analysis Results, 2023

Based on the level of sustainability using leverage analysis, it is shown by the Root Mean Square (RMS) value of 58.63 which is shown to be in the interval 50.01-75.00 which is in the fairly sustainable category. Where the increase in the RMS value obtained is presented in the following table:

Table 4. Improvement RMS

Iteration	S-Stress	improvements
1	0.29951	-
2	0.22620	0.07331
3	0.21640	0.00980

4	0.21645	0.00500

Source: Analysis Results, 2023

The change in the RMS value shown in the table is getting smaller, so that the ecological sustainability index is not supported by 4 dimensions so that it is only in a fairly sustainable status.

Furthermore, the combined matrix results from expert opinions (stakeholders) are processed with prospective analysis software and the calculation results can be visualized in a diagram of influence and dependence between factors as shown in the following figure:

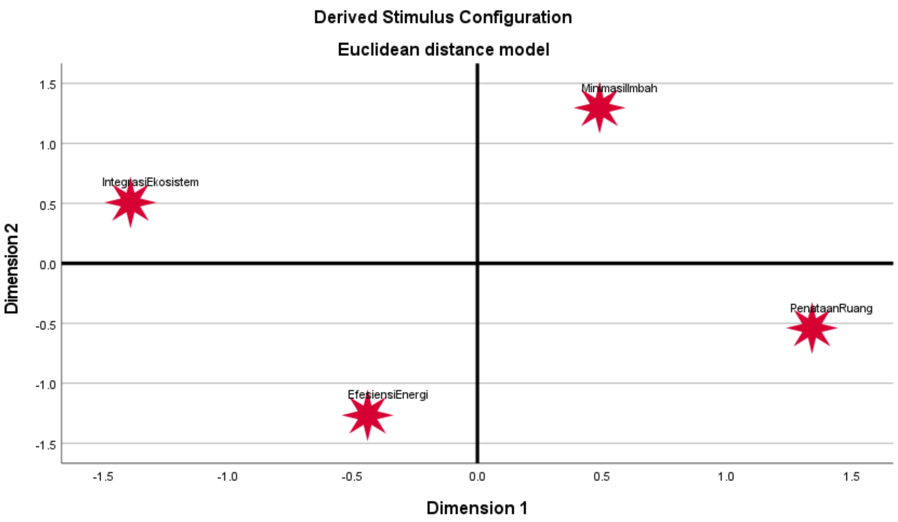

Figure 1. Influence and Dependence Diagram

Diagram 1. shows that waste minimization is a linking variable on the ecological dimensions and ecosystem integration which are the determining factors in which these two indicators are key factors.

2) Economic Dimension Sustainability Index

The economic dimension of industrial estate companies consists of 4 attributes, namely; production supporting factors, welfare, economic multipler, and profitability after MDS analysis was carried out seen from the S-stress and RSQ values with the S-stress-based model feasibility assessment category being 0.12518 or 1.25% which means that the model has good feasibility (fit). Thus the RSQ value is quite low, namely 0.49774 (49.77%), where the RSQ interpretation value is the same as R-square in linear regression.

The results of this analysis illustrate that the data used is sufficient and all indicators of the sustainability of industrial and non-industrial areas analyzed are accurate enough so that the final results of the research can be accounted for.

Table 5. Stress Value and Determination Coefficient (R2)

Parameter	Sustainability Dimension
stress	0.12518
R2	0.49774
Iteration	7

Source: Analysis Results, 2023

Based on the level of sustainability using leverage analysis, it is shown by the Root Mean Square (RMS) value of 49.77 which is shown to be in the interval 25.01-50.00 which is in the less sustainable category. Where the increase in the RMS value obtained is presented in the following table:

Table 6. RMS Improvements

Iteration	S-Stress	improvements
1	0.35606	-
2	0.33568	0.02037
3	0.30789	0.2779
4	0.28017	0.02773
5	0.24090	0.03927
6	0.23896	0.00194
7	0.2386	0.00033

Source: Analysis Results, 2023

The change in the RMS value shown in the table is getting smaller, so that the economic sustainability index is not really supported by 4 indicators so that it is only in a less sustainable status.

Furthermore, the combined matrix results from expert opinions (stakeholders) are processed with prospective analysis software and the calculation results can be visualized in a diagram of influence and dependence between factors as shown in the following figure:

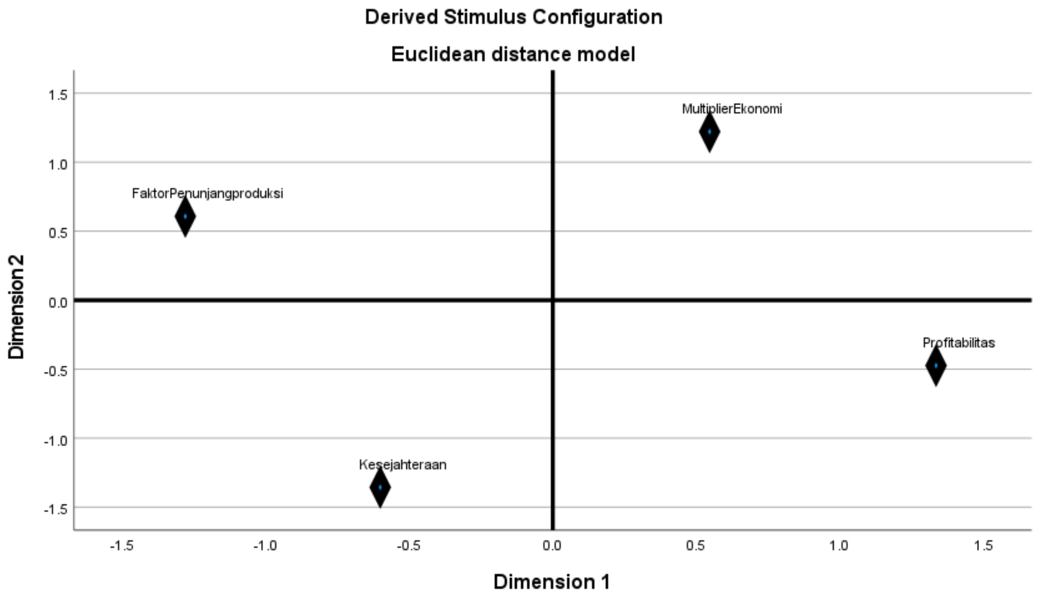

Figure 2. Influence and Dependence Diagram

Diagram 5.79. shows that the economic multiple is a connecting variable in the economic dimension and production support factors which are the determining factors, these two indicators are the key factors.

3) Socio-Cultural Dimension Sustainability Index

The socio-cultural dimension of industrial estate companies consists of 4 attributes, namely; quality of life, employment, community empowerment, and social stability after the MDS analysis was carried out in terms of the S-stress and RSQ values with the S-stress-based feasibility assessment category of 0.13867 or 0.13%, which means that the model has good feasibility (fit). Thus the RSQ value is quite low, namely 0.37539 (37.53%), where the RSQ interpretation value is the same as R-square in linear regression.

The results of this analysis illustrate that the data used is sufficient and all indicators of the sustainability of industrial and non-industrial areas analyzed are accurate enough so that the final results of the research can be accounted for.

Table 7. Stress Value and Determination Coefficient (R2)

Parameter	Sustainability Dimension
stress	0.13867
R2	0.37539
Iteration	5

Source: Analysis Results, 2023

Based on the level of sustainability using leverage analysis, it is shown by the Root Mean Square (RMS) value of 37.53 which is shown to be in the interval 25.01-50.00 which is in the less sustainable category. Where the increase in the RMS value obtained is presented in the following table:

Table 8. RMS Improvements

Iteration	S-Stress	improvements
1	0.33972	-
2	0.28865	0.05106
3	0.27333	0.01532
4	0.26578	0.00755
5	0.26597	0.00019

Source: Analysis Results, 2023

The change in the RMS value shown in the table is getting smaller, so that the socio-cultural sustainability index is not very well supported by the 4 indicators so that it is only in a less sustainable status.

Furthermore, the combined matrix results from expert opinions (stakeholders) are processed with prospective analysis software and the calculation results can be visualized in a diagram of influence and dependence between factors as shown in the following figure:

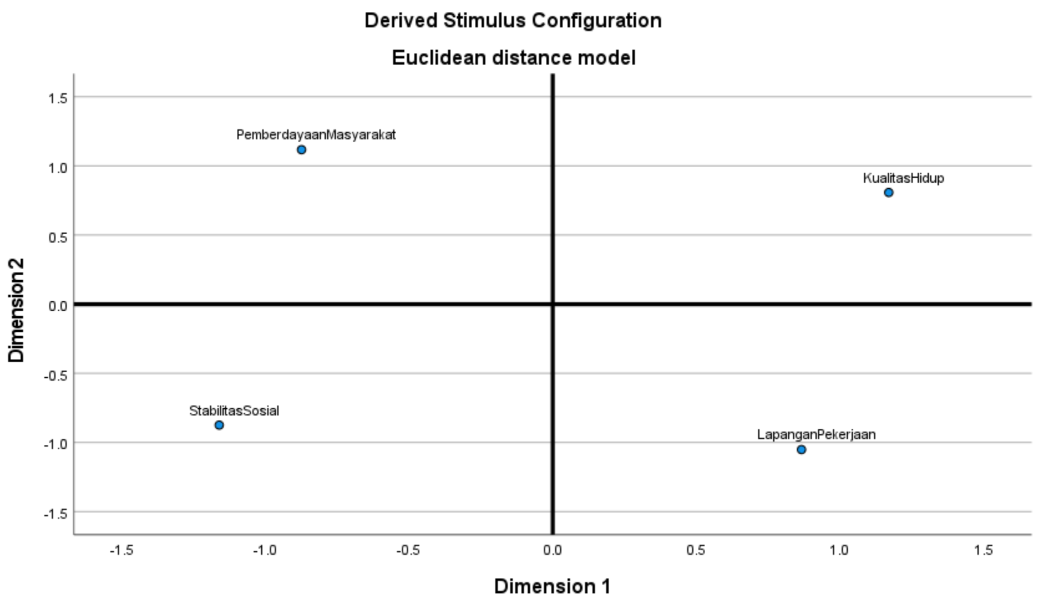

Figure 3. Influence and Dependence Diagram

Diagram 3. shows that quality of life is a connecting variable in the socio-cultural dimension and community empowerment which are the determining factors, the two indicators being the key factors.

4) Sustainability Index of Management and Institutional Dimensions

The socio-cultural dimension of industrial estate companies consists of 4 attributes, namely; management management, performance monitoring, institutional/stakeholder collaboration, and government policies after MDS analysis is carried out seen from the S-stress and RSQ values with the S-stress-based model feasibility assessment category is 0.12996 or 0.12%, which means that the model has good feasibility (fit). Thus the RSQ value is quite low, namely 0.47597 (47.59%), where the RSQ interpretation value is the same as R-square in linear regression.

The results of this analysis illustrate that the data used is sufficient and all indicators of the sustainability of industrial and non-industrial areas analyzed are accurate enough so that the final results of the research can be accounted for.

Table 9. Stress Value and Determination Coefficient (R2)

Parameter	Sustainability Dimension
stress	0.12996
R2	0.47597
Iteration	4

Source: Analysis Results, 2023

Based on the level of sustainability using leverage analysis, it is shown by the Root Mean Square (RMS) value of 47.59 which is shown to be in the interval 25.01-50.00 which is in the less sustainable category. Where the increase in the RMS value obtained is presented in the following table:

Table 10. Improvement RMS

Iteration	S-Stress	improvements
1	0.32149	-

2	0.26324	0.05824
3	0.24769	0.01556
4	0.24741	0.00028

Source: Analysis Results, 2023

The change in the RMS value shown in the table is getting smaller, so that the management and institutional sustainability index is not very well supported by the 4 indicators so that it is only in a less sustainable status.

Furthermore, the combined matrix results from expert opinions (stakeholders) are processed with prospective analysis software and the calculation results can be visualized in a diagram of influence and dependence between factors as shown in the following figure:

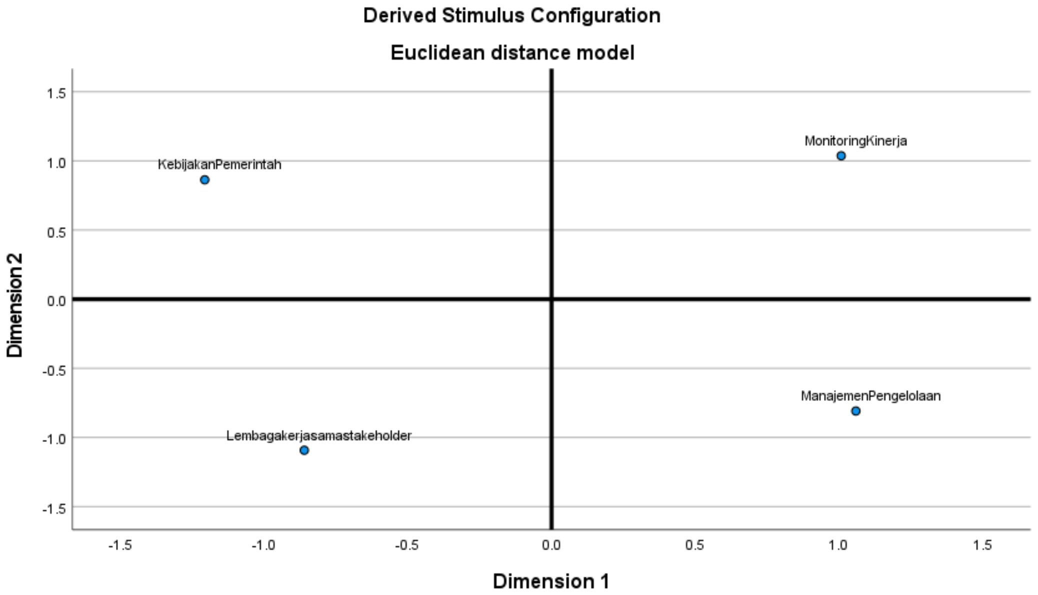

Figure 4. Influence and Dependence Diagram

Diagram 4. shows that performance monitoring is a connecting variable in the management and institutional dimensions, while government policies are the determining factor, these two indicators are the key factors.

Based on the results of the sustainability analysis with MDS on all dimensions with 4 attributes in industrial areas, a sustainability value of 48.38 was obtained and included in the less sustainable category (value interval 25.01-50.00). The value of sustainability is supported by 3 dimensions (economic, socio-cultural, and institutional management) with the highest value of the ecological dimension, while the socio-cultural dimension is in the lowest position with the less sustainable category.

Table 11. Multidimensional Sustainability Status of Industrial Development

Dimensions	Industrial area	Status
Ecology	58.63	Sufficiently Sustainable
Economy	49.77	Less Sustainable
Socio-cultural	37.53	Less Sustainable
Management and Institutions	47.59	Less Sustainable

Source: Analysis Results, 2023

The Sustainability Index of industrial estate companies for all dimensions with 3 attributes is in the less sustainable category with a value of 37.53-49.77 (25-50 value interval). This condition originates from the values of 3 dimensions (economic, institutional management and socio-cultural) which are less sustainable, while 1 dimension (ecology) is in the fairly sustainable category.

Furthermore, based on prospective analysis of leverage indicators resulting from the Multidimensional Scaling (MDS) analysis process, there are 4 key factors for industrial areas as described in the following table:

Table 12. Recapitulation of Leverage Indicators and Key Factors

Dimensions/Indicators	MDS analysis		PPAs analysis	
	KI	NKI	KI	NKI
1. Ecology				
a. Spatial planning	1.34	0.53		
b. Ecosystem Integration	1.39	0.5	FK	
c. Energy Efficiency	0.44	1.26		
d. Waste Minimization	0.48	1.29		FK
2. Economy				
a. Profitability Level	1.33	0.47		
b. Prosperity level	0.6	1.35		
c. Economic Multipliers	0.24	1.22		FK
d. Production Support Factors	1.27	0.6	FK	
3. Socio-Cultural				
a. Jobs	0.86	1,051		
b. Quality of Life	1.16	0.8	FK	
c. Community empowerment	0.87	1.11		FK
d. Social Stability	1.16	0.87		
4. Management & Institutions				
a. Management Management	1.05	0.8		
b. Performance Monitoring	1.07	1.03	FK	FK
c. Institution/stakeholder cooperation	0.86	1.09		
d. Government policy	1.2	0.86	FK	

Source: Analysis Results, 2018

Description: FK. Leverage Indicators become Key Factors

Determination of industrial sustainability status in the route area is needed as a reference for realizing an industry that is economically profitable, socially appropriate and manageable as well as environmentally and ecologically friendly. In terms of the ecological conditions of the industrial area, the route area is in a fairly sustainable position with a value of (58.63) and slightly better than the other dimensions which are in the less sustainable category (37.53-49.77).

Assessment of the 15 selected indicators produces 4 indicators which are key factors for industrial estates. Of the 15 indicators for the two types of industrial development in the five dimensions, their respective priorities were produced, namely; (1) the ecological dimension prioritizes waste minimization in areas around mining areas and ecosystem integration.

Waste minimization is a connecting factor that will support the sustainable development of the industrial route area. Where development is a necessity in the human life cycle and natural resources are a limitation. There are needs, there are also limitations, there are benefits as well as impacts caused by a development. Increasing development activities carry the risk of environmental pollution and destruction, so that they can affect the structure and basic functions of ecosystems as life support. The mining industry utilizes natural resources as the main raw material, produces mineral materials that are very valuable to humans both economically and technologically, and also produces waste that can disturb the environment.

Industrial output in the form of waste will be even greater and industrial activities will increase, including the mining industry. Mining activities tend to produce waste, both production and non-production waste which is currently more likely to be disposed of into the environment. The waste generated is quite large both in type and volume and with different characteristics. If it is not managed properly, it will become a big problem in the destruction of the environment around the mining industrial area.

Prevention of pollution and environmental damage due to waste needs to be prioritized in an effort to realize an environmentally sound mining industry. The current action is not optimal so it still needs to be improved, so that the waste produced is no longer buried in the ground. The waste minimization strategy with reduce, reuse, recycle actions needs to be implemented immediately, as an effort to improve the environment. increasing efficiency, saving costs, as well as forming social relations and enhancing corporate image. By reducing, reuse, recycle will save natural resources and materials, extend the life of the material, reduce pressure on land and places of burning, and will substantially save energy and protect public health.

Furthermore, the majority of the route area is currently forest, so that ecosystem integration is very important. Ecosystem integration is management to facilitate public participation and collaborative decision making. Long-term sustainability is a fundamental goal of ecosystem management. This is achieved in part through the inclusion of ecological models and understandings that incorporate the complex and dynamic character of ecosystems and recognize humans as an inherent component of ecosystems. Change and uncertainty are intrinsic characteristics of most ecosystems, and ecosystem management is an approach that recognizes the occurrence of stochastic events as well as predictable variability (Holling 1993).

Ecosystem management must therefore be flexible enough to learn from scientific analyses and advances and to adapt to changing institutional and environmental conditions. An ecosystem management approach is essential for the management of complex systems such as watersheds and marine fisheries, where management must consider the multiple changes and relationships among ecosystems through the movement of water, air, animals, and plants.

(2) the economic dimension prioritizes aspects of the economic multiplier and production supporting factors by increasing per capita income while simultaneously reducing the poverty rate. A sector is said to be able to support sustainable economic development when the sector not only makes a large contribution to gross added value, but also contributes to improving economic aspects in upstream and downstream sectors/sectors. The impact from the output aspect is that the upstream sector is experiencing an impact in the form of absorbing the goods/services produced, while the downstream sector is experiencing an impact in the form of getting a supply of goods/services to carry out its

production process. The impact of these demands ultimately affects primary input components from the upstream and/or downstream sectors, such as labor compensation, depreciation, indirect taxes, and business surplus. For the route region, it shows that it has a lot of biodiversity and tourism dynasties as well as natural resources that are still not fully touched, which have the potential to be developed.

(3) the socio-cultural dimension pays attention to aspects of the quality of life of the community and community empowerment. The development of sustainable industrial areas can be realized by taking into account aspects of the quality of life of the community. Where people always want their lives to be included in the prosperous category. Therefore, they try to make ends meet by working. In rural areas, the prosperous category is identified with the fulfilment of daily food needs. Therefore, most agricultural and plantation businesses are one of the important sectors in rural communities.

Routa communities who live around mining companies are those who live adjacent to the location or area of mining activity. Such ecological conditions and the influx of new communities, technology, knowledge and culture have created a separate response for village communities that are still traditional

The life of the rural community, which was initially simple, was entered into a new situation and smelled of modernity, namely the entry of large companies to process natural resources in their area, such as exploration and exploitation of land for the mining business, which certainly had an impact on their quality of life. This has a direct impact on the Routa community around the mining area.

The development of the social life of the people who are surrounded by industrial activities around the route area requires the intervention of the company in developing the area around the company's work area. Corporate and community social responsibility but also involves the government, especially local governments in terms of the rights and obligations of citizens as well as the management of development and community development. Action or corporate social responsibility focuses at least on three issues in CSR (Corporate Social Responsibility), namely corporate governance, environment, and community development.

The operation of a mining company in Routa has a real impact on the surrounding community. Social, economic, cultural and environmental changes are events that can certainly appear as new colors in the lives of the surrounding community. It is hoped that positive changes will become hopes, although it cannot be denied that negative biases emerge from the process of social change.

Furthermore (4) the dimension of institutional management prioritizes aspects of the mechanism for monitoring the evaluation of company performance and government policies. The presence of the mining industry in Routa is projected to absorb around six to eight thousand workers. It is believed that the absorption of so many workers will alleviate unemployment.

With these developments to support the sustainable status of regional development, institutional management and local government policies are needed. Through government policies that provide opportunities for regional development through private investment in Routa, nickel and other derivative factories will be built in the Routa area. This includes nickel derivatives, namely lithium, which is used as a raw material for making electric vehicle batteries.

This development will certainly accelerate regional progress. With the investment to help people find jobs and overcome employment problems in Konawe for the local government. As for government support, one of them is for Routes to accelerate the Route Detailed Spatial Plan (RDTR). Thus, when a corporation builds its industrial area or other supporting areas related to industry, it will consistently have a positive impact on the community by prioritizing all the potential that exists in Konawe to support the company's production activities. Whether it's the potential of natural resources (SDA) or human resources (HR).

CONCLUSION

1. The status of the sustainability of industrial area development in the Routa area of Konawe Regency, Southeast Sulawesi, as an industrial area development area, the status of the sustainability of industrial area development in the Routa area of Konawe Regency, Southeast Sulawesi must be a major concern. This sustainability status must be monitored and evaluated regularly to ensure that the development of industrial estates is sustainable and does not damage the surrounding environment. Its sustainability status includes several things, namely:

a. Environmental conservation: Environmental conditions around the Routa area of Konawe Regency, Southeast Sulawesi must be monitored to ensure that the development of industrial estates does not damage the environment. If the development of industrial estates threatens the environment, measures must be taken to reduce the impact.

b. Waste management: Industrial land use usually involves the production of a considerable amount of waste. Therefore, waste management must be properly monitored and regulated so as not to damage the environment and the health of the surrounding community.

c. Social aspects: The existence of an industrial area in the Routa area of Konawe Regency, Southeast Sulawesi must also pay attention to social aspects such as workers' rights, job security, and the influence of the existence of the industry on the surrounding community.

d. Development of green infrastructure: Development of green infrastructure such as city parks or other green areas should be considered to maintain air quality and the surrounding environment.

e. Community involvement: Communities around the Routa area of Konawe Regency, Southeast Sulawesi must be involved in the industrial area development process to ensure that their needs and interests are accommodated.

By taking into account these factors, it is hoped that the status of the sustainability of industrial estate development in the Konawe Regency Route area, Southeast Sulawesi, can be maintained and continues to increase. This will have a positive impact on the welfare of the community, the environment and the economy of the surrounding area.

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