
Perspectives on the Mining Economy and Sustainable Economy in Parittiga Sub District Through Gap Analysis, Evaluative Analysis, and SWOT Analysis

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Abstract

Tin mining has historically been an important way for people to earn a living in the Parittiga Subdistrict, located in West Bangka Regency. The heavy reliance on mining makes the community economically unstable and shows the need to explore various economic activities for a more sustainable local economy. Previous research has examined economic diversification and sustainable growth in mining-dependent areas, but there is still little research that combines Gap Analysis, Evaluative Analysis, and SWOT Analysis to evaluate the current situation and create a strategic plan. The study aims to determine the difference between the current and desired economic situation, assess factors that help or hinder progress, and develop a sustainable economic change plan in Parittiga District. The study collected data from 60 respondents, who were deliberately selected, including miners, farmers, fishermen, small business owners, educators, and local officials, through in-depth surveys and interviews. The analysis examines 27 factors categorized into nine areas, livelihood structure, economic diversification, local opportunities, human resources, community engagement, institutional capabilities, environmental management, post-mining land use, and natural resource conservation. The Gap Analysis reveals ongoing issues related to economic diversity, community development, effective use of local resources, post-mining land productivity, and environmental care. The Evaluative Analysis found 9 positive indicators and 18 negative indicators, indicating that while there is a basis for economic change, it is still not fully developed. The SWOT analysis places the Parittiga Subdistrict in Quadrant IV (Weaknesses–Threats), at approximate coordinates (-0.694, -0.224). Therefore, the focus is on WT's strategy to increase economic diversification, improve community skills and support for businesses, make productive use of post-mining land, develop local products, and manage the environment effectively. These results suggest that to achieve sustainable economic transformation in Parittiga, there needs to be a gradual reduction of dependence on mining by encouraging alternative economic activities and encouraging collaboration between governments, local communities, and other partners.

Keywords: Sustainable Economy; Mining Economy; Gap Analysis; Evaluative Analysis, SWOT Analysis; Economic Transformation.

1. Introduction

Tin mining has long been an important economic activity and a major source of livelihood for communities in the Bangka Belitung Islands Province, one of Indonesia's major tin-producing regions. Although tin mining generates significant economic benefits, excessive dependence on the sector creates economic vulnerability, particularly because mining activity and income are influenced by fluctuations in global tin prices. Declining production or unfavorable commodity prices may reduce mining activities and employment opportunities, thereby increasing the economic vulnerability of communities that depend heavily on the sector (Listiawati *et al.*, 2024). Therefore, dependence on mining requires attention to the development of alternative and more sustainable economic activities. The mining and quarrying industry remains a significant part of the local economy as shown in the growth of the value and volume of tin export in the Bangka Belitung Islands Province in the 2021-2025 period as stated by the Central Statistics Agency.

Table 1.1 Tin Exports from the Bangka Belitung Islands

Year	Value/Price(Rp)	Weight/kg
2021	2.320.759.494,78	61.198.886,70
2022	2.241.240.402,63	73.211.440,30
2023	1.690.203.336,40	65.272.724,10
2024	1.317.740.287,20	42.174.996,40
2025	1.664.263.975,99	49.439.273,40

Source: Central Bureau of Statistics, 2026

The economic importance of tin mining can also be observed from the province's export performance. Data from the Central Bureau of Statistics show that the value and volume of tin exports fluctuated considerably during 2021–2025. The export value declined from Rp2.32 trillion in 2021 to Rp1.32 trillion in 2024 before increasing to Rp1.66 trillion in 2025, while export volume also fluctuated during the same period. These changes indicate the vulnerability of a mining-dependent economy to changes in market conditions. At the regional level, the mining and quarrying sector remained an important contributor to the Gross Regional Domestic Product (GRDP) of Bangka Belitung Islands Province, although its contribution declined from 9.37% in 2021 to 7.67% in 2025. At the same time, agriculture, forestry, and fisheries continued to make a substantial contribution to the regional economy, indicating potential for economic diversification beyond mining (Central Bureau of Statistics, 2025).

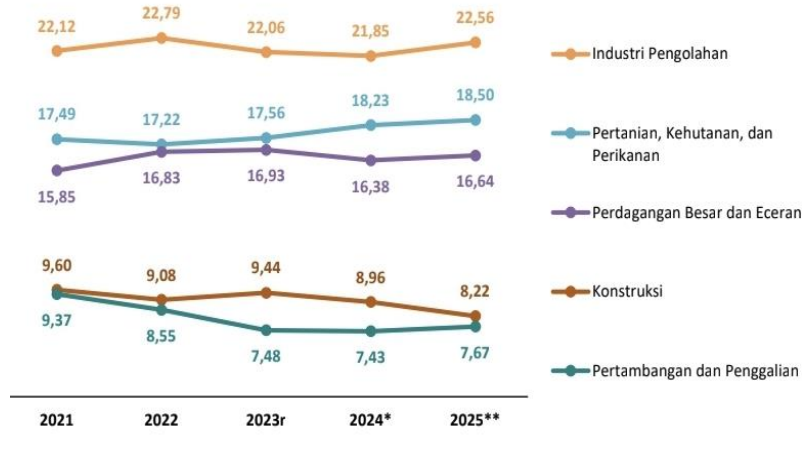


Figure 1.1. Contribution of the Five Largest Economic Sectors to the Gross Regional Domestic Product (GRDP) of the Bangka Belitung Islands Province, 2021 to 2025

Source: Central Statistics Agency of the Bangka Belitung Islands Province. Gross Regional Domestic Product of the Bangka Belitung Islands Province by Industry, 2026.

This condition highlights the importance of economic transformation in mining-dependent regions. The development of value-added sectors, particularly agriculture, fisheries, and local industries, can reduce dependence on mining while creating alternative sources of income for local communities (Supriadi *et al.*, 2024). Economic diversification can also strengthen community welfare, improve the local economic structure, and increase long-term economic resilience (Herdiyanti *et al.*, 2025). In Parittiga Subdistrict, where mining remains an important source of livelihood, the transition toward a more sustainable economy therefore requires an assessment of existing economic conditions, the availability of alternative economic activities, community capacity, institutional support, and the potential utilization of post-mining resources. Previous studies have examined economic diversification and sustainable development in mining-dependent areas, while SWOT Analysis has frequently been used to identify internal and external strategic factors affecting regional economic development (Mendatu *et al.*, 2022). However, Gap Analysis, evaluative analysis, and SWOT Analysis have generally been applied as separate analytical approaches. Consequently, there is still limited research that integrates these three approaches to examine the relationship between existing economic conditions, expected conditions, evaluative findings, and strategic responses in a mining-dependent local economy. This gap is particularly relevant in Parittiga Subdistrict, where economic transformation involves not only reducing dependence on mining but also strengthening alternative livelihoods, developing local economic potential, improving community capacity, utilizing post-mining land, and strengthening environmental management.

Therefore, this study integrates Gap Analysis, Evaluative Analysis, and SWOT Analysis to provide a comprehensive assessment of the transition from a mining-dependent economy toward a more sustainable local economic structure in Parittiga Subdistrict. The analysis covers 27

indicators grouped into nine dimensions: livelihood structure, economic diversification, utilization of local potential, human resources, community participation, institutional capacity, environmental management, post-mining land utilization, and natural resource conservation. The study aims to identify the gaps between existing and expected economic conditions, evaluate the factors that support or constrain economic transformation, and formulate strategic priorities for strengthening sustainable economic development in Parittiga Subdistrict. These findings are expected to contribute to the literature on sustainable regional development and provide evidence-based considerations for local governments and stakeholders in designing policies to reduce the decline in dependence on mining, which will be evidence of a growing transitional capacity.

2. Literature Review

Mining-dependent regions often face challenges in maintaining long-term economic stability because community livelihoods and regional economic activities remain closely associated with the extraction of finite natural resources. In Bangka Belitung, tin mining continues to play an important economic role, but strong dependence on this commodity may also create economic, social, and environmental vulnerabilities. Listiawati et al. (2024) emphasize that sustainable development in tin-producing areas requires a balance between economic benefits, social conditions, and environmental sustainability. Therefore, the sustainability of mining regions cannot be assessed solely from the contribution of mining to economic growth, but also from their capacity to develop alternative economic activities and manage environmental impacts.

Economic transformation in mining-dependent regions is closely related to economic diversification. Diversification is required to reduce dependence on a single extractive sector and increase community resilience to changes in commodity prices and mining activities. Supriadi et al. (2024) highlight the importance of developing multiple productive sectors to create inclusive and sustainable economic value. Similarly, Herdiyanti et al. (2025) show that post-mining livelihood transitions require communities to adapt toward alternative economic activities. In this context, agriculture, fisheries, MSMEs, local product development, and other productive sectors can become important alternatives for strengthening local economic resilience.

The development of local economic potential is also strongly related to the capacity of communities to generate added value from existing resources. MSME development, product innovation, and the utilization of agricultural and fishery products can strengthen local income sources and provide alternatives to mining-dependent livelihoods. Mariska et al. (2023) indicate that the development of flagship MSME products can contribute to local economic growth, while Nur et al. (2024) demonstrate that processing agricultural and fishery products can increase their economic value. However, such transformation also requires adequate community skills, access to business support, financing, and institutional assistance. Consequently, economic diversification should not only focus on the availability of alternative sectors but also on strengthening the capacity of communities to develop these sectors sustainably.

Another important aspect of economic transformation in mining areas is the management and productive utilization of post-mining land. Post-mining areas may create environmental

problems if they are left unmanaged, but they can also provide opportunities for new economic activities when appropriately rehabilitated and utilized. Saputra et al. (2022) underline the importance of community social capital in post-mining land restoration, while Muhandi and Cintyawati (2022) emphasize innovation and collaboration in supporting sustainable reclamation. Post-mining land can also be developed for productive activities, including fisheries, agriculture, tourism, or other economic uses, depending on land characteristics and environmental feasibility. Thus, post-mining land management represents both an environmental responsibility and an opportunity for economic diversification.

Previous research has also demonstrated the importance of strategic approaches in supporting regional economic transformation. Mendatu et al. (2022) examined regional economic transformation in a mining-related context and highlighted the importance of identifying strategic factors that influence structural economic change. SWOT Analysis is frequently applied to distinguish internal strengths and weaknesses from external opportunities and threats, enabling the formulation of alternative development strategies. Nevertheless, strategic analysis alone does not directly demonstrate the magnitude of differences between existing and expected conditions. Gap Analysis provides a complementary approach because it identifies differences between current conditions and desired conditions. In this study, the approach is used to assess the extent to which existing economic conditions differ from the conditions expected to support a sustainable economy. Evaluative Analysis subsequently interprets these findings by identifying conditions that support or constrain economic transformation. SWOT Analysis then translates these findings into internal and external strategic factors and formulates alternative strategies. The sequential use of these three approaches therefore creates an analytical link between identifying economic gaps, evaluating their implications, and formulating strategies for economic transformation.

Based on the reviewed literature, sustainable transformation in mining-dependent areas involves several interconnected aspects, including livelihood structure, economic diversification, utilization of local potential, human resource capacity, community participation, institutional support, environmental management, productive utilization of post-mining land, and natural resource conservation. These aspects form the conceptual basis for the 27 indicators grouped into nine dimensions used in this study. By integrating Gap Analysis, Evaluative Analysis, and SWOT Analysis, this research seeks to provide a more comprehensive understanding of how existing local economic conditions can be evaluated and translated into strategic priorities for sustainable economic transformation in Parittiga Subdistrict.

3. Method

This research used a descriptive qualitative research design to study perceptions about the mining economy and how it is connected with sustainable economic development in Parittiga Subdistrict West Bangka Regency. This method has been chosen to give a detailed insight into the economic situation of the community according to the perceptions of the respondents, define how the current and desired situations are different and create a strategy that would facilitate economic development based on the conditions in the community (Saputra *et al.*, 2022).

The research used primary data which was gathered under the form of questionnaires and in-depth interviews. The surveys were conducted to address the perception of the participants on the present and anticipated economic situations present, whereas the interviews were carried out to facilitate greater understanding and help solidify the authorship of the results. The gathered information were examined with the help of Gap Analysis, evaluative analysis and SWOT Analysis. Gap Analysis was employed to locate disparities between the actual and the planned state, evaluative analysis was employed to gauge the magnitude of the determined gaps and SWOT Analysis to develop strategies to change the mining-based economy into a more sustainable economic system.

3.1 Research Design and Study Areas

This study examines the transition from an economy dependent on the mining sector to a more sustainable economic structure in Parittiga District, West Bangka Regency, Bangka Belitung Islands Province. This study is designed to assess current economic conditions, identify differences between actual and expected conditions, evaluate supporting and inhibiting factors, and formulate strategic priorities for sustainable economic transformation. This study was conducted in ten villages in the Parittiga District area to capture variations in local economic conditions and community perspectives.

3.2 Participants and Sampling

This study involved 60 respondents who were selected using the *purposive sampling* method. The respondents consisted of miners, farmers, fishermen, MSME actors, teachers, and village officials who were considered to have adequate knowledge about economic conditions and development potential in Parittiga District. The selection of respondents aimed to obtain perspectives from various groups directly involved in mining activities, alternative economic sectors, community development, and local governance.

3.3 Research Instruments and Indicators

Primary data were collected using structured questionnaires and in-depth interviews. The questionnaire was compiled based on indicators that reflect the mining-based economy and sustainable economic development in Parittiga District. A total of 27 indicators were grouped into nine dimensions, livelihood structure, economic diversification, utilization of local potential, human resources, community participation, institutional capacity, environmental management, post-mining land utilization, and natural resource conservation.

The questionnaire measured respondents' perceptions of two conditions for each indicator: current conditions (P) and expected conditions (K). The use of the same indicators for both conditions allowed this study to identify differences between the current economic situation and the conditions considered ideal for sustainable economic development. Furthermore, in-depth interviews were conducted to provide contextual information to interpret the perception data that are quantitative in nature.

3.4 Data Collection

Data collection was carried out through questionnaires and in-depth interviews. Questionnaires were given to selected respondents to obtain their perceptions of current conditions and expected conditions for each indicator. Interviews were conducted to obtain additional information related to local economic conditions, community experiences, constraints, development potential, as well as factors influencing the transition from a mining-based economy. A combination of data from questionnaires and interviews was used to strengthen the interpretation of the analysis results.

3.5 Data Analysis

The data were analyzed sequentially through three stages of analysis: Gap Analysis, Evaluative Analysis, and SWOT Analysis. Each stage has a different analysis function. Gap Analysis is used to identify the difference between current conditions and expected conditions. Furthermore, Evaluative Analysis is used to interpret the direction of the gap and classify each indicator as a supporting (+) or inhibitory factor (-). Finally, SWOT Analysis is used to organize the internal and external factors that have been identified and formulate strategic priorities for economic transformation.

3.5.1 Gap analysis

Analisis Kesenjangan dilakukan sebagai tahap awal analisis untuk memeriksa perbedaan antara kondisi ekonomi saat ini dan kondisi yang dianggap ideal untuk mendukung pembangunan ekonomi berkelanjutan di Subdistrik Parittiga. Analisis ini melibatkan perbandingan kondisi aktual yang diperoleh dari persepsi dan hasil wawancara responden dengan kondisi yang diharapkan untuk masing-masing indikator penelitian. Pendekatan ini mengikuti prinsip perbandingan antara kinerja aktual dan kondisi yang diinginkan atau diharapkan (Bititci et al., 2016).

Penilaian mencakup 27 indikator yang dikelompokkan ke dalam sembilan dimensi, yaitu struktur mata pencaharian, diversifikasi ekonomi, pemanfaatan potensi lokal, sumber daya manusia, partisipasi komunitas, kapasitas kelembagaan, pengelolaan lingkungan, penggunaan lahan pasca-pertambangan, dan konservasi sumber daya alam. Setiap indikator dinilai untuk menentukan apakah kondisi saat ini telah terpenuhi, mendekat, atau tetap berbeda dari kondisi yang diharapkan.

3.5.2 Evaluative Analysis

Evaluative Analysis was employed to evaluate how each indicator contributes to moving towards a sustainable local economy. This assessment relied on the current situations identified through surveys and detailed conversations. Each indicator was examined based on whether it aided or impeded economic change. Indicators that showcased situations, possibilities, or advancements that could help facilitate the transition were labeled as positive (+) indicators. Conversely, those that showed limitations, challenges, or circumstances likely to obstruct the transition were

marked as negative (–) indicators. This categorization was founded on the meaningful implications of each indicator and its importance to sustainable economic change, rather than on a numerical difference calculation. The results were then utilized to pinpoint the key supportive and obstructive elements in Parittiga Subdistrict. These insights laid the groundwork for the later SWOT Analysis by helping identify areas that needed strengthening, enhancement, or strategic action.

3.5.3 SWOT Analysis

SWOT Analysis was conducted as the final stage of the analytical process to formulate strategic priorities for the transition from a mining-dependent economy toward sustainable economic development. The SWOT factors were derived from the findings of the Gap Analysis and Evaluative Analysis and were subsequently classified according to their strategic characteristics. Internal factors represent conditions that are relatively controllable or can be influenced by local communities, businesses, institutions, and local government. These factors were classified as Strengths (S) when they represented existing capacities or conditions that could support economic transformation, and as Weaknesses (W) when they represented internal limitations that could constrain the transformation process. External factors represent conditions originating from the broader economic, social, environmental, policy, or market environment and are not directly controllable by local actors. These factors were classified as Opportunities (O) when they provided favorable external conditions for economic transformation and as Threats (T) when they created external risks or constraints.

The classification of factors was based on the substance of each indicator and its relationship to the economic transformation process rather than solely on the positive or negative direction of the gap. The (+) and (–) classification from the Evaluative Analysis was therefore used as an initial indication of supporting and constraining conditions, while the internal–external classification was determined by considering whether the factor originated from within or outside the direct control of local actors. This procedure was applied to avoid treating all positive indicators as Strengths and all negative indicators as Weaknesses.

After the factors were classified into S, W, O, and T, an Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS) were prepared. Each factor was assigned a weight representing its relative importance and a rating representing its condition or strategic response. The weight of each factor was determined based on its relative importance to the economic transformation process, with the total weight within each matrix equal to 1.00. The rating was assigned according to the condition of the factor, with higher ratings indicating a more favorable condition or stronger strategic influence.

The weighted score for each factor was calculated by multiplying its weight by its rating:

$$\text{Weighted Score} = \text{Weight} \times \text{Rating}$$

The total IFAS score was obtained by summing the weighted scores of all Strength and Weakness factors, while the total EFAS score was obtained by summing the weighted scores of all Opportunity and Threat factors. The internal strategic coordinate was calculated as the difference between the total Strength score and the total Weakness score:

$$X = S - W$$

The external strategic coordinate was calculated as the difference between the total Opportunity score and the total Threat score:

$$Y = O - T$$

The resulting X and Y coordinates were plotted on the SWOT matrix to determine the strategic position of Parittiga Subdistrict. The position was then interpreted according to the four SWOT quadrants: Quadrant I (Strength–Opportunity), Quadrant II (Strength–Threat), Quadrant III (Weakness–Opportunity), and Quadrant IV (Weakness–Threat).

Based on the identified strategic position, four types of strategic alternatives were formulated: SO strategies, which utilize strengths to take advantage of opportunities; WO strategies, which use opportunities to overcome weaknesses; ST strategies, which utilize strengths to reduce or address threats; and WT strategies, which seek to minimize weaknesses and avoid or reduce threats. The resulting strategy was used to determine the priority direction for economic transformation in Parittiga Subdistrict.

4. Results

4.1 Respondent Characteristics

This study involved respondents selected using purposive sampling, specifically members of the community who understand the economic conditions in Parittiga Subdistrict. The respondents consisted of miners, farmers, fishermen, MSME operators, teachers, and village officials. The respondents' characteristics are presented by gender, age, highest level of education, occupation, and length of employment to provide an overview of the profile of the respondents who served as the sources of information for this study.

4.2 Gap Analysis Results

The gap analysis identified differences between current and ideal conditions on 27 indicators and nine dimensions. The results show that there are still gaps in terms of economic diversification, local resource utilization, human resource capacity, institutional support, post-mining land utilization, and environmental management. However, a number of alternative economic activities such as MSMEs, agriculture, fisheries, and post-mining land use have begun to develop. These activities still need further strengthening to support a more diverse and sustainable local economy.

Table 4. 1. Results of Gap Analysis

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
1	Dependence on mining	Communities remain dependent on the tin mining sector as their primary source of income	Alternative economic sectors have not yet developed into primary income sources; consequently, community reliance on tin mining remains high.	his dependency can be reduced through livelihood diversification and the development of alternative economic activities, thereby providing communities with more varied sources of livelihood and greater socio-economic resilience (Dwijaya <i>et al.</i> , 2021).
2	Livelihood diversity	Livelihood options have diversified across various sectors—such as plantations, fisheries, and the creative economy—yet the mining sector remains dominant	Although community livelihoods have diversified, non-mining sectors have not yet developed optimally, meaning mining continues to be the primary source of income	Communities possess diversified and productively developing livelihood sources, thereby reducing reliance on the mining sector and enhancing their resilience to changing economic conditions (Dwijaya <i>et al.</i> , 2021).

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
3	Community income stability	Community income remains influenced by fluctuations in mining activity and commodity prices, as mining serves as the primary source of income for the majority of the population	Dependence on mining revenue means that community income remains vulnerable to changes in mining activity and commodity prices	Communities have more diverse sources of livelihood through job diversification, thereby reducing socioeconomic vulnerability resulting from dependence on a single sector and increasing the communities' economic resilience (Dwijaya <i>et al.</i> , 2021).
4	MSME development	MSMEs are beginning to grow, but their contribution remains limited	MSMEs have grown, but their contribution to income, job creation, and the strengthening of the local economy remains limited.	MSMEs have evolved into productive economic activities capable of increasing income, creating job opportunities, and strengthening local economic growth in a sustainable manner (Mariska <i>et al.</i> , 2023).
5	Agricultural development sector	The agricultural sector has potential, but it has not yet been fully utilized.	Agricultural potential exists, but its utilization and development have not yet been optimized, so it has not yet become a strong alternative source	The agricultural sector is being developed productively through the utilization of local potential, capacity building among communities,

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
			of livelihood.	processing of agricultural products, and the development of business activities, thereby increasing income and providing an alternative source of livelihood for communities (Witjoro <i>et al.</i> , 2023).
6	Fisheries development	sector Fishing activities still coexist with mining, so fishing serves as a secondary source of income for the community.	The fisheries sector remains a secondary activity and has not yet been fully developed as a source of livelihood for the community.	The potential of the fisheries sector is developed through improving community skills, processing fishery products, and developing businesses based on local potential, thereby generating economic value and strengthening community livelihoods (Nur <i>et al.</i> , 2024).
7	Utilization of local resources	The potential of local resources has not yet been fully and sustainably utilized.	The potential of local resources has not yet been fully harnessed to generate productive and sustainable economic	Local resources are utilized and developed into productive economic activities based on the region's potential, thereby

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
			activities	generating economic value and improving community well-being (Nur <i>et al.</i> , 2024).
8	Development of flagship products	It does not yet have a specific flagship product, so it cannot yet be developed	Local potential has not yet been identified and developed in a targeted manner into flagship products with economic value and competitiveness.	Flagship products are developed based on local potential and characteristics through quality improvement, innovation, marketing, and collaboration among stakeholders, thereby enhancing competitiveness and strengthening the local economy (Mariska <i>et al.</i> , 2023).
9	Value addition to local products	Local products add value to the economy, although not yet fully and they have not yet become the region's flagship products	The processing, innovation, and development of local products have not yet reached their full potential, so the economic value added that the community receives remains limited	Local products are developed through crop processing, product innovation, and quality improvement, thereby generating higher added value and increasing community income (Witjoro <i>et al.</i> , 2023).
10	Education level	The level of education in the	The community's level of education	Education, as part of human capital

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
		Parittiga subdistrict ranks second highest in West Bangka Regency, where high school graduates and those with equivalent qualifications make up the majority.	is relatively good, but this has not yet been fully accompanied by the development of human resources capable of supporting alternative economic activities.	development, can enhance the knowledge and productive capacity of the population, thereby supporting increased productivity and the development of economic activities (Anshory & Wijayanti, 2022).
11	Community skills	The community has skills outside the mining sector, but these are still limited	The community already possesses skills outside the mining sector, but these skills are still limited and have not been fully developed in line with local economic potential.	The community possesses the skills to process products and develop businesses based on local potential, enabling them to produce economically valuable products and develop alternative sources of livelihood (Nur <i>et al.</i> , 2024).
12	Training and competency development	Training and capacity-building programs for the community, conducted in collaboration with the Department of Labor	Training is available, but its sustainability, alignment with community needs, implementation of training outcomes, and post-training support are not yet optimal.	Skills enhancement training is conducted in accordance with the needs of business owners and is accompanied by ongoing

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
				mentoring so that the skills acquired can be applied to business development and sustainability (Nelsyah <i>et al.</i> , 2026).
13	Involvement in economic development	The community's involvement in local economic development has not yet been optimal	The community has been involved in local economic development, but its involvement has not been active or comprehensive.	The community is actively involved in local economic development through collaboration among the community, businesses, the government, and other stakeholders to support the sustainability of local economic activities (Mariska <i>et al.</i> , 2023).
14	Willingness to transition to alternative economic sectors	Some members of the community are already willing to transition to a sustainable economy that no longer relies on mining	The public's willingness to make the transition has emerged, but it is not yet fully supported by the necessary skills and the development of alternative livelihood opportunities.	Communities have sufficient capacity and alternative livelihood options, enabling them to reduce their dependence on mining and strengthen their socioeconomic resilience (Asrani & Mukmin, 2025).
15	Community cooperation	The community has not yet	Cooperation among	The development of local economic

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
		achieved comprehensive cooperation among its various groups, so there is still room for improvement	communities and groups has not yet been strongly organized in the development of local economic activities.	activities is carried out through collaboration among the community, business groups, the government, and other stakeholders to strengthen business development and the local economy (Mariska <i>et al.</i> , 2023).
16	Government support	The Government program has provided support in the form of training, equipment and supplies assistance.	The government has provided support, but the sustainability, program integration, equitable distribution of benefits, and impact on business development have not yet been optimal.	The government supports sustainable community economic development through capacity building, business development facilitation, access to financing, and institutional coordination tailored to community needs (Arafah & Karyono, 2025).
17	Business mentoring	There is no specific business assistance for the community.	There is no specific and sustainable business assistance available for the	Business actors receive ongoing assistance to increase their business management capacity,

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
			community.	overcome obstacles to business development, and maintain the sustainability of economic activities (Prestianawati <i>et al.</i> , 2025).
18	Access to capital assistance	There is already access to capital assistance provided to the community through banking and village cooperatives.	Access to capital is available through banking and village cooperatives, but its utilization and effectiveness in supporting the development of community businesses is not yet optimal.	Business actors gain access to financing supported by capacity building and mentoring so that capital sources can be utilized effectively to develop and maintain business sustainability (Sarfiah <i>et al.</i> , 2019).
19	Reclamation of former mining land	There has been reclamation for former mining land, such as areas owned by companies that have IUPs, which are the responsibility of the company, while areas outside the company's IUP or areas mined by	Reclamation has been carried out by companies and the government, but it has not yet covered all former mining land.	Former mining land is reclaimed in a planned manner through land management, erosion control, revegetation, and maintenance so that land conditions and environmental functions can be restored sustainably

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
		the community, the sub-district government has carried out reclamation, but not yet in its entirety.		(Anafiati, 2021).
20	Environmental management impact	Handling of environmental impacts due to mining has been carried out by the relevant agencies but is still limited.	Environmental impact management has been carried out by the relevant agencies, but its implementation is still limited and not yet comprehensive.	The environmental impacts resulting from mining activities are managed through reclamation planning, land management and restoration, revegetation, and environmental maintenance in a planned and sustainable manner (Anafiati, 2021).
21	Pollution control	Pollution monitoring and control is carried out by the relevant agencies but is still limited.	Pollution monitoring and control has been carried out by the relevant agencies, but is still limited and not comprehensive.	Land that has been contaminated due to mining activities is restored through the application of appropriate remediation technology to reduce the content of pollutants and improve environmental quality (Hisyam

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
<i>et al., 2024).</i>				
22	Utilization of post-mining land	Post-mining land is reused as community plantations for those whose mining areas belong to the community itself, for land that does not belong to the community, it is planted with trees by the local government but not yet on a comprehensive basis.	Some post-mining land has been used for plantations and revegetation, but its use is not yet comprehensive and has not been developed based on the characteristics of each land.	Former mining land and pits are reused according to their conditions and designation for various productive activities so that they can provide economic, social, and environmental benefits after mining activities end (Braja Tejha Sidiq & Mukhtar, 2024).
23	Post-mining productivity land	The productivity of post-mining land still has the potential to be further developed into oil palm plantations and development in the tourism sector.	The potential of post-mining land for plantations and tourism has not been realized and managed optimally for productive activities.	Post-mining land is managed according to its characteristics and designation to become productive activities that can provide economic and environmental benefits in a sustainable manner (Braja Tejha Sidiq & Mukhtar, 2024).
24	Development of post-mining land-based businesses	Post-mining land-based businesses are still limited, but some have	Post-mining land-based businesses have begun to develop through	Post-mining land is developed for various productive

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
		been developed into tourist attractions.	utilization as tourist attractions, but are still limited and have not become a widespread alternative source of income for the community.	activities according to the characteristics and potential of the land, such as tourism and cultivation activities, so that it can become a basis for developing alternative economic activities for the community (Braja Tejha Sidiq & Mukhtar, 2024).
25	Natural conservation resource	Efforts to preserve natural resources are still not optimal due to the lack of public awareness.	Low public awareness and participation means that efforts to conserve natural resources have not yet been carried out optimally.	Environmental preservation and restoration of ex-mining land is carried out by increasing community involvement, awareness, and acceptance of reclamation activities so that environmental restoration can provide sustainable ecological and social benefits (Nur Habibaha, Fournita Agustinab, 2019).

N0	Indicator	Existing Conditions	GAP	Ideal Conditions
26	Sustainable resource utilization	The utilization of resources is still oriented towards short-term profits and people have not thought about the long-term effects.	The utilization of natural resources has not considered the balance between current economic benefits, environmental protection, and the sustainability of resource benefits for society in the future.	Utilization of natural resources is carried out by considering the sustainability of economic, social, and environmental benefits so that economic activities can meet the current needs of society without reducing the ability of the environment and resources to support people's lives in the future (<i>Utami et al., 2023</i>).
27	Efforts to maintain environmental balance	Public awareness is still low in maintaining environmental balance and still needs to be improved.	Low public awareness and involvement means that efforts to prevent damage, restore the environment and maintain environmental functions have not been carried out optimally.	Environmental balance is maintained through community involvement in environmental management and restoration, increasing environmental awareness, and collaboration between the community and stakeholders so that environmental functions can be

No	Indicator	Existing Conditions	GAP	Ideal Conditions
				maintained sustainably (Nur Habibaha, Fournita Agustinab, 2019).

Source: processed by researcher, 2026

4. 3 Evaluative Analysis Results

The evaluative analysis was conducted to assess the existing conditions of each indicator and determine its contribution to the achievement of a sustainable economy. Each indicator was classified as either a supporting factor (+) or a constraining factor (–) based on whether the existing condition supports or hinders the transition toward a sustainable economic structure. The results of this evaluation provide an overview of the factors that can support economic transformation as well as the aspects that still require improvement in Parittiga Subdistrict, as presented in Table 3.2.

Table 4.2. Results of Evaluative Analysis

No.	Indicators	Remarks
1	Communities dependent on mining have begun to decrease in numbers.	+
2	Livelihood options have begun to diversify across several non-mining sectors, although mining remains dominant.	+
3	Household income remains influenced by fluctuations in mining activity and commodity prices.	-
4	MSMEs are beginning to grow, although their contribution remains limited.	+
5	Agricultural potential exists, although its utilization has not yet been optimized.	+
6	Fishery activities have yet to yield maximum economic value.	-
7	The potential of local resources has not yet been fully utilized.	-
8	The quantity and quality of the region's flagship products remain limited.	-
9	The processing of local products remains rudimentary and of low economic value.	-
10	The level of education among the population is relatively developed, although it remains varied and uneven.	+
11	The skills of the community outside the mining sector remain limited	-
12	Training programs have not yet reached the entire community.	-
13	Community involvement in local economic development remains suboptimal.	-
14	Some people still choose to work in the mining sector	-

No.	Indicators	Remarks
15	Cooperation among community groups still needs to be enhanced.	-
16	Government programs have provided support through training, equipment, and other forms of assistance, although their implementation remains limited.	+
17	Business support for the community has not yet been provided on a regular basis.	-
18	Access to business capital is available through banking institutions and village cooperatives, although its utilization remains limited.	+
19	Reclamation of former mining land has been carried out by companies and the government, although it has not yet covered all affected areas.	+
20	The management of environmental impacts resulting from mining remains limited.	-
21	Pollution monitoring and control have not yet reached an optimal level	-
22	Some post-mining land has been utilized for plantations and revegetation, although its utilization is not yet comprehensive.	+
23	Post-mining land productivity remains low	-
24	Post mining land based businesses remain limited	-
25	Efforts to conserve natural resources are still not optimal	-
26	Resource utilization remains oriented towards short term profits	-
27	Awareness of the need to maintain environmental balance still needs to be raised	-

Source: processed by researcher, 2026

The results of the evaluative analysis showed that there were 9 positive indicators and 18 negative indicators. These positive indicators reflect the initial foundation for economic transformation, which includes community dependence on the mining sector, livelihood diversification, MSME development, agricultural potential, education, government support, access to capital, reclamation activities, and partial use of post-mining land. Meanwhile, negative indicators show that the use of local resources, skill and business development, environmental management, and post-mining land productivity still need improvement.

4. 4 SWOT Analysis Results

The SWOT analysis is carried out as the final stage of analysis to formulate the strategic direction of economic transformation in Parittiga District. The SWOT factors are obtained from the findings of the Gap Analysis and Evaluative Analysis, and are classified based on two criteria, positive or negative conditions of internal or external factors.

4.4.1 Identification of Internal and External Factors

Based on the results of the previous analysis, this study identifies internal factors through strengths and weaknesses that describe the current capacity and conditions of the local economy.

Meanwhile, this study groups external factors into opportunities and threats that come from conditions beyond the direct control of the local community.

Table 4.3. SWOT Factors

Internal Factors	External Factors
Strength :	Opportunity :
1. Communities dependent on mining have begun to decrease in numbers.	1. Government programs have provided support through training, equipment, and other forms of assistance, although their implementation remains limited.
2. Livelihood options have begun to diversify across several non-mining sectors, although mining remains dominant.	2. Access to business capital is available through banking institutions and village cooperatives, although its utilization remains limited.
3. MSMEs are beginning to grow, although their contribution remains limited.	3. Reclamation of former mining land has been carried out by companies and the government, although it has not yet covered all affected areas.
4. Agricultural potential exists, although its utilization has not yet been optimized.	4. Some post-mining land has been utilized for plantations and revegetation, although its utilization is not yet comprehensive.
5. The level of education among the population is relatively developed, although it remains varied and uneven.	
Weakness :	Threat :
1. Household income remains influenced by fluctuations in mining activity and commodity prices.	1. Training programs have not yet reached the entire community.
2. Fishery activities have yet to yield maximum economic value.	2. Business support for the community has not yet been provided on a regular basis.
3. The potential of local resources has not yet been fully utilized.	3. The management of environmental impacts resulting from mining remains limited.
4. The quantity and quality of the region's flagship products remain limited.	4. Pollution monitoring and control have not yet reached an optimal level
5. The processing of local products remains rudimentary and of low economic value.	5. Efforts to conserve natural resources are still not optimal
6. The skills of the community outside the mining sector remain limited	
7. Community involvement in local economic development remains suboptimal.	

8. Some people still choose to work in the mining sector

9. Cooperation among community groups still needs to be enhanced.

10. Post-mining land productivity remains low

11. Post mining land based businesses remain limited

12. Resource utilization remains oriented towards short term profits

13. Awareness of the need to maintain environmental balance still needs to be raised

Source: processed by researcher, 2026

Based on Table 4. 3, Parittiga District has several advantages, including variations in employment, progress in the field of small and medium enterprises, potential in the agricultural sector, and good education. However, there are also some weaknesses from within, such as dependence on income from the mining sector, lack of local resource utilization, low skills in the community, land productivity after mining, and awareness of environmental issues. In terms of external opportunities, there is support from the government, access to business capital, reclamation projects, and post-mining land use. Meanwhile, existing threats include lack of training, support for unsustainable businesses, as well as problems in environmental management, pollution control, and natural resource protection that are not good enough. These factors are used as the basis for the IFAS and EFAS analysis to determine strategic positions in transforming the economy in Parittiga District.

4.4.2 Internal Factor Evaluation Matrix (IFAS)

The Internal Factor Evaluation (IFAS) Matrix is used to identify and evaluate the internal factors consisting of strengths and weaknesses that influence economic transformation in Parittiga Subdistrict. Each factor is assigned a weight, rating, and score to determine its relative contribution to the internal strategic position, as presented in Table 4.4.

Table 4.4. IFAS Matrix

Internal Factors	Weight Ratings Score		
Strength			
1. Communities dependent on mining have begun to decrease in numbers.	0,053	4	0,211
2. Livelihood options have begun to diversify across several non-mining sectors, although mining remains dominant.	0,056	3	0,169
3. MSMEs are beginning to grow, although their contribution remains limited.	0,058	4	0,231
4. Agricultural potential exists, although its utilization has not yet been optimized.	0,053	4	0,214
5. The level of education among the population is relatively developed, although it remains varied and uneven.	0,055	4	0,221
Total	0,276		1,047
Weakness			
1. Household income remains influenced by fluctuations in mining activity and commodity prices.	0,054	3	0,161
2. Fishery activities have yet to yield maximum economic value.	0,053	2	0,107
3. The potential of local resources has not yet been fully utilized.	0,053	2	0,106
4. The quantity and quality of the region's flagship products remain limited.	0,054	1	0,054
5. The processing of local products remains rudimentary and of low economic value.	0,054	1	0,054
6. The skills of the community outside the mining sector remain limited	0,055	3	0,164
7. Community involvement in local economic development remains suboptimal.	0,057	3	0,172
8. Some people still choose to work in the mining sector	0,059	4	0,237
9. Cooperation among community groups still needs to be enhanced.	0,058	3	0,173
10. Post-mining land productivity remains low	0,057	1	0,057
11. Post mining land based businesses remain limited	0,055	1	0,055
12. Resource utilization remains oriented towards short term profits	0,059	3	0,176
13. Awareness of the need to maintain environmental balance still needs to be raised	0,056	4	0,224
Total	0,724		1,741

Source: processed by researcher, 2026

The total IFAS score shows that internal weaknesses outweigh internal strengths, indicating that the sustainable economic transformation is still constrained by several internal limitations.

4. 4. 3 External Factor Evaluation Matrix (EFAS)

The External Factor Evaluation (EFAS) Matrix is used to identify and evaluate external factors in the form of opportunities and threats that influence the economic transformation process in Parittiga Subdistrict. Each factor is assigned a weight, rating, and score to determine its relative importance and overall external strategic position, as presented in Table 4.5.

Table 4.5. EFAS Matrix

External Factors	Weight	Ratings	Score
Opportunity			
1. Government programs have provided support through training, equipment, and other forms of assistance, although their implementation remains limited.	0,113	2	0,226
2. Access to business capital is available through banking institutions and village cooperatives, although its utilization remains limited.	0,109	2	0,217
3. Reclamation of former mining land has been carried out by companies and the government, although it has not yet covered all affected areas.	0,112	2	0,224
4. Some post-mining land has been utilized for plantations and revegetation, although its utilization is not yet comprehensive.	0,111	1	0,111
Total	0,444		0,777
Threat			
1. Training programs have not yet reached the entire community.	0,11	3	0,329
2. Business support for the community has not yet been provided on a regular basis.	0,114	2	0,229
3. The management of environmental impacts resulting from mining remains limited.	0,111	1	0,111
4. Pollution monitoring and control have not yet reached an optimal level	0,11	1	0,11
5. Efforts to conserve natural resources are still not optimal	0,111	2	0,221
Total	0,556		1,001

Source: processed by researcher, 2026

The EFAS results demonstrate that external threats have a greater influence than external opportunities, indicating that sustainable economic development is challenged by unfavorable external conditions.

4.4.4 SWOT Quadrant Position

The SWOT quadrant was determined using the difference between the total strength and weakness scores (X-axis) and the difference between the total opportunity and threat scores (Y-axis).

$$X = 1,047 - 1,741 = -0,694$$

$$Y = 0,777 - 1,001 = -0,224$$

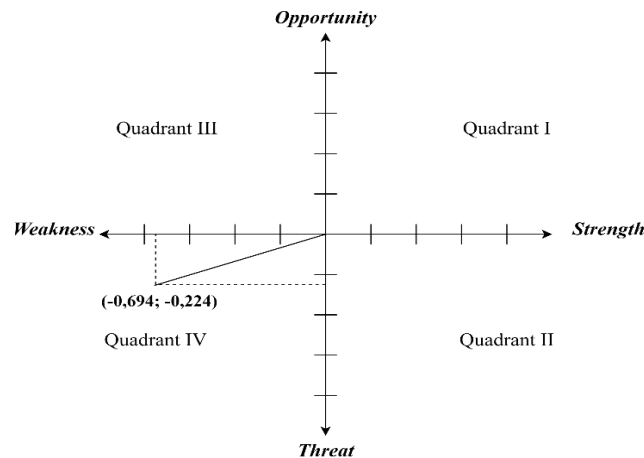


Figure 4.1. SWOT Coordinates

Source: processed by researcher, 2026

The results from the IFAS and EFAS analyses show that economic change in the Parittiga Subdistrict falls into Quadrant IV, which is marked as Weakness–Threat, with coordinates at (-0.694; -0.224). The internal weaknesses, scored at 1.741, are greater than the strengths, which are at 1.047. At the same time, external threats, rated at 1.001, surpass the opportunities, which stand at 0.777. Notable weaknesses involve reliance on income from mining, limited use and value of local fisheries and resources, poor product quality and processing methods, community skills and participation that are lacking, reduced productivity of land after mining, and temporary use of resources. The primary threats include a lack of training options, unpredictable business support, poor environmental management, weak pollution regulation, and not enough conservation of natural resources. As a result, the WT strategy aims to address these internal weaknesses and external threats by promoting economic diversification, developing local resources, utilizing land after mining, building community skills, and enhancing environmental management.

4.4.5. SWOT Matrix

The SWOT Matrix is used to systematically combine internal factors, such as strengths and weaknesses, with external factors, such as opportunities and threats, to identify and formulate appropriate alternative strategies for economic transformation in Parittiga Subdistrict. The results of this analysis consist of four strategic alternatives, namely SO, ST, WO, and WT strategies, as presented in Table 4.6.

Table 4. 6. SWOT Matrix Strategy

	Strength :	Weakness :
IFAS	1. Communities dependent on mining have begun to decrease in numbers. 2. Livelihood options have begun to diversify across several non-mining sectors, although mining remains dominant 3. MSMEs are beginning to grow, although their contribution remains limited. 4. Agricultural potential exists, although its utilization has not yet been optimized 5. The level of education among the population is relatively developed, although it remains varied and uneven	1. Household income remains influenced by fluctuations in mining activity and commodity prices. 2. Fishery activities have yet to yield maximum economic value. 3. The potential of local resources has not yet been fully utilized 4. The quantity and quality of the region's flagship products remain limited 5. The processing of local products remains rudimentary and of low economic value. 6. The skills of the community outside the mining sector remain limited 7. Community involvement in local economic development remains suboptimal 8. Some people still choose to work in the mining sector 9. Cooperation among community groups still needs to be enhanced. 10. Post-mining land productivity remains low 11. Post mining land based businesses remain limited 12. Resource utilization remains oriented towards short term
EFAS		

		profits
		13. Awareness of the need to maintain environmental balance still needs to be raised
Opportunity :	SO Strategy :	ST Strategy :
1. Government programs have provided support through training, equipment, and other forms of assistance, although their implementation remains limited. 2. Access to business capital is available through banking institutions and village cooperatives, although its utilization remains limited. 3. Reclamation of former mining land has been carried out by companies and the government, although it has not yet covered all affected areas 4. Some post-mining land has been utilized for plantations and revegetation, although its utilization is not yet comprehensive	1. Strengthen emerging non-mining livelihood activities by utilizing agricultural potential and the growing MSME sector. 2. Develop agricultural and MSME products by utilizing the relatively developed educational capacity of the community. 3. Encourage the development of alternative economic activities through existing government programs, business financing, and post-mining land utilization. 4. Strengthen the transition toward a more diversified local economy by building on existing economic activities and the initial utilization of post-mining land.	1. Utilize existing agricultural, MSME, and emerging non-mining livelihood activities to reduce vulnerability to fluctuations in mining activities and commodity prices. 2. Improve community capacity through education and existing economic activities to respond to limited access and coverage of training programs. 3. Use the existing economic potential of agriculture and MSMEs to support more sustainable resource utilization and reduce pressure on natural resources. 4. Encourage the use of existing community and economic capacities to strengthen participation in environmental management and natural resource conservation. 5. Use existing educational capacity to improve community awareness and participation in sustainable resource management.
Threat :	WO Strategy :	WT Strategy :
1. Training programs have not yet reached the entire	1. Utilize government support and available business capital to improve	1. Strengthen economic diversification to reduce household dependence on

community	community skills, product quality, processing capacity, and the utilization of local resources.	mining and vulnerability to fluctuations in mining activities and commodity prices.
2. Business support for the community has not yet been provided on a regular basis		
3. The management of environmental impacts resulting from mining remains limited	2. Improve fisheries, local resource utilization, and value-added processing through training, financing, and technical assistance.	2. Expand and strengthen community training, business assistance, and skills development outside the mining sector.
4. Pollution monitoring and control have not yet reached an optimal level	3. Utilize reclamation programs and existing post-mining land to increase land productivity and develop post-mining land based businesses.	3. Increase the productivity of post-mining land and develop productive post-mining land based businesses as alternative sources of income.
5. Efforts to conserve natural resources are still not optimal	4. Strengthen community participation and cooperation through government-supported economic development programs.	4. Strengthen environmental management, pollution monitoring and control, and natural resource conservation through coordinated government and community action.
		5. Shift resource utilization from short-term economic benefits toward productive and environmentally sustainable activities.

Source: processed by researcher, 2026

The SWOT matrix generated four alternative strategies (SO, ST, WO, and WT). Based on the strategic position in Quadrant IV, the WT strategy was prioritized, emphasizing livelihood diversification, improvement of community skills and business support, optimization of post-mining land, enhancement of local product value, and strengthened environmental management and natural resource conservation.

5. Discussion

This study achieved its objectives by examining the mining-dependent economy, evaluating the progress made toward a sustainable local economy, and developing a transition plan for Parittiga Subdistrict using Gap Analysis, Evaluative Analysis, and SWOT Analysis. The results indicate that tin mining remains the primary source of household income, despite economic diversification driven by the emergence of small and medium-sized enterprises, agriculture, fisheries, and other alternative options. Nevertheless, the impact of these non-mining sectors

remains minimal, suggesting that the economic transition has not yet been fully realized (Ronyastra *et al.*, 2024).

The research findings indicate that Parittiga Subdistrict is currently in a transitional phase. Although mining remains a significant source of household income, other economic activities are slowly beginning to emerge. These findings do not imply that mining activities should be discontinued immediately. Rather, they indicate the need for a gradual transition toward a more diversified and resilient local economic structure

These findings align with Solow's Theory of Economic Growth, which states that sustainable economic growth depends not only on natural resources but also on human skills, investment, and technological progress (Solow 2000). In Parittiga, the growth of small and medium-sized enterprises, agriculture, fisheries, and the utilization of post-mining land indicate that new pathways for economic growth are beginning to take shape. However, their still-limited effectiveness points to the need for further improvements in terms of skills, financial resources, innovation, and institutional support.

This study shows that sustainable economic development has not yet been fully achieved. Although the government has launched various initiatives in the form of training, financial assistance, business support, and post-mining land rehabilitation, the scope and effectiveness of these programs remain inadequate (Muhardi & Cintyawati, 2022). Skills available outside the mining sector remain limited, local resources have not been optimally utilized, and value-added processing remains weak; all of these factors constrain the potential for economic diversification. These findings suggest that for an economy to be sustainable, it requires not only growth but also improved community skills and responsible environmental management. This aligns with the views of Lin & Xing (2020), Fitriyah & Arifqi (2024), and (Listiawati *et al.*, 2024), who emphasize the importance of balancing economic, social, and environmental aspects in sustainable development. They also support the findings of Supriadi *et al.* (2024) and Herdiyanti *et al.* (2025), which show that economic diversification is key to enhancing resilience in mining-dependent regions. This study further highlights that small and medium-sized enterprises, agriculture, fisheries, and post-mining land can contribute to diversification; however, their growth remains hampered by a lack of skilled labor, access to financing, product competitiveness, and institutional support. The results of the SWOT analysis confirm these conclusions by placing Parittiga Subdistrict in a position where internal weaknesses and external threats are more significant. Major weaknesses include suboptimal utilization of local resources, low product value-added, limited community skills, and unproductive post-mining land. External threats consist of inadequate training opportunities, inconsistent business support, poor environmental management, and weak pollution control and conservation efforts. Therefore, the WT strategy must focus on economic diversification, improving community skills, developing local products, effectively utilizing post-mining land, and improving environmental management.

In practical terms, the results of this study indicate that local governments should focus on developing small and medium-sized enterprises, agriculture, and fisheries, while also improving access to training, business assistance, financing, and markets. In addition, there needs to be a greater emphasis on creating new products and improving the quality of existing ones. On the other hand, post-mining land management must be carried out more effectively, and environmental conservation efforts must involve both the government and the community.

This study has several limitations. First, it covers only the Parittiga subdistrict, so the results cannot be generalized to all mining areas in Indonesia. Second, the analysis relies in part on respondents' opinions, which may introduce bias. Third, this study examines only a specific point in time, so it does not capture how the economy might change over a longer period. Future research should consider a broader area, a longer timeframe, and a combination of qualitative and quantitative methods.

Overall, the study's findings indicate that Parittiga Subdistrict has the potential to build a more resilient and sustainable local economy. However, to bring about this change, a gradual shift away from dependence on mining and a stronger focus on developing other economic sectors are necessary. The success of these efforts will depend on how well the government, the community, business actors, and other relevant stakeholders can utilize local resources effectively, creatively, and sustainably.

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