

A Comprehensive Strategy Formulation for Business Sustainability: A Case Study of a Coal Mining Company

¹Novia Siti Nurjanah, ²Riyan Harbi Valdiansyah*, ³Sri Rahayu

^{1,2,3}Master of Accounting, Faculty of Economics and Business, Budi Luhur University

E-mail: ¹2332600226@student.budiluhur.ac.id; ²rvaldiansyah@budiluhur.ac.id;

³sri.rahayu@budiluhur.ac.id

ABSTRACT

The aim of this study is to evaluate the comprehensive strategy formulation of PT XYZ, an Indonesian coal mining company, by applying the IFE-EFE and QSPM methods. The research involved interviews with 10 senior management members from various divisions to obtain a holistic view of the company. The findings showed that the most effective strategy to boost sales during the current period is the optimal one among the four strategies identified through QSPM analysis. This study's results are expected to strengthen the sustainability of coal mining companies by improving management strategies through corporate strategy analysis. The researchers acknowledge the limitations in expanding the strategies used in the SWOT analysis, offering future researchers the chance to develop more comprehensive IPO development indicators as needed.

Keywords: Strategy Formulation Comprehensive, IFE-EFE Matrix, SWOT, QSPM, Strategic Management

1. INTRODUCTION

Effective strategy formulation in coal mining companies is essential for addressing various challenges, including operational efficiency, technological advancement, sustainability, and competitiveness. By employing structured approaches and considering multiple factors, companies can develop robust strategies that drive long-term success and adapt to changing market conditions (Tkacheva et al, 2015).

Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) analytics play a crucial role in strategic decision-making for coal mining companies, offering a structured approach to assess internal strengths and weaknesses as well as external opportunities and threats (Firky et al., 2022; Reza et al., 2024). These tools are particularly valuable in the coal mining

industry, which faces complex operational challenges and environmental concerns.

For coal mining companies, IFE-EFE analytics can help identify key factors influencing their performance and competitiveness. For instance, the PTKP Coal Mining Company used a mixed-methods approach, including qualitative insights and quantitative data analysis, to address operational challenges and optimize resource allocation (Reza et al., 2024). Similarly, the application of lean production methods in coal hauling operations demonstrated the importance of systematic analysis in improving productivity (Hia, 2024).

Interestingly, the integration of IFE-EFE analytics with other strategic tools can provide more comprehensive insights. The SWOT Matrix IFE-EFE

combined with the Quantitative Strategic Planning Matrix (QSPM) has been used to develop marketing strategies for SMEs, which could be adapted for coal mining companies (Maulana et al., 2023). Additionally, the concept of External Competitive Profile Matrix (ECPM) and Internal Competitive Profile Matrix (ICPM) extends the traditional IFE-EFE approach, offering greater comparative understanding of a company's position relative to competitors (Cassidy et al., 2013).

This research is a case study on the XYZ coal company operating in southern Kalimantan. It has been initiated with the objective of assisting the company in achieving its strategic goals. The preparation of the strategy must be carried out by the party directly responsible for the strategic decision. The process of preparing the planned strategy from the beginning can be evaluated using numerical measures so that it can be used as a reference parameter in its achievement (Wulandari & Ningsih, 2023). It is anticipated that the company will undertake periodic and consistent evaluations, utilizing risk management tools or the third line of defense, namely the audit in the form of findings based on the audit program. Furthermore, the objective of this research is to examine the steps of PT XYZ's strategy, commencing with the input stage and concluding with the results, which can then be generalized and employed in the formulation of comprehensive strategies for other mining companies.

2. LITERATURE REVIEW

2.1 Stakeholder Theory

Stakeholder theory provides a valuable framework for comprehensive strategy formulation in coal mining companies, emphasizing the importance of engaging with and addressing the concerns of various stakeholders.

Mining activities can significantly impact local communities, the environment, and the economy, making stakeholder management crucial for sustainable operations (Lindman et al., 2020).

A key aspect of implementing stakeholder theory in mining companies is the development of a long-term, comprehensive strategy that allows for continuous learning, adaptation, and refinement (Wei-Skillern, 2004). This approach is particularly relevant in the mining sector, where stakeholder pressure has increased due to potential negative social and environmental impacts. To address these concerns, mining companies have increasingly focused on corporate social responsibility (CSR) practices (Ansu-Mensah et al., 2021; Lindman et al., 2020).

2.2 Strategy Management Process

Strategic management can be defined as the art and science of formulating, implementing and evaluating cross-functional decisions that enable an organization to achieve its goals. The objective of strategic management is to integrate the various functional areas of an organization, including management, marketing, finance and accounting, production and operations, research and development, and information systems, to achieve organizational success (David et al., 2023).

Strategic management enables companies to add value, create, discover, strengthen and overcome their competitive position (Fuentes et al., 2020). The success of a company or organization can be reflected in their ability to adapt to environmental developments, including technological and market changes.

In their analysis of the strategic planning process, David et al (2023) identify three distinct stages.

1. The formulation of strategies is the second stage of the strategic planning process. This stage includes the development of a vision and mission statement, the identification of external opportunities and threats, the determination of internal strengths and weaknesses, the creation of long-term goals, the initiation of alternative strategies, and the selection of specific strategies to achieve the goals.
2. The strategy implementation stage comprises the formulation of annual goals, the establishment of motivational policies for employees, and the allocation of resources by the company, with the objective of enabling the implementation of the formulated strategy.
3. The final stage of the strategic management process is the evaluation of the strategy. This stage comprises the activities of reviewing internal and external factors, measuring performance, and taking corrective action where necessary.

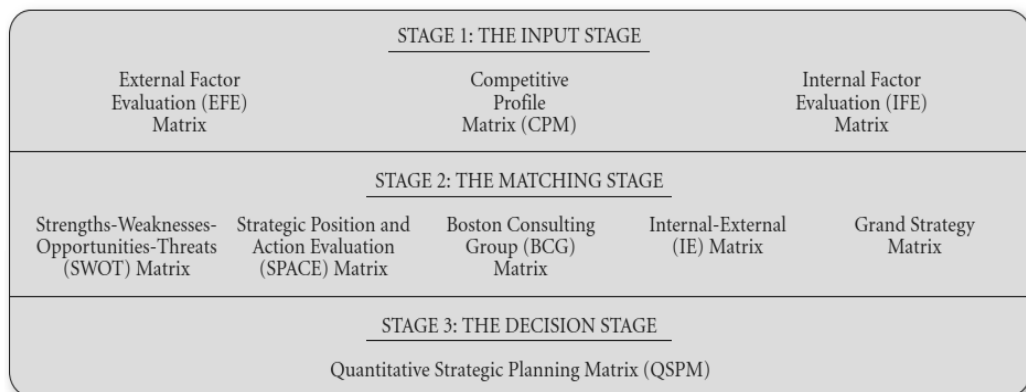


Figure 1. Strategy Formulation

Source: David et al., 2023

3. RESEARCH METHOD

3.1 Data Collection

This research employs a case study analytical approach to examine a coal mining company operating in South Kalimantan, Indonesia. Data collection techniques include interviews and questionnaires with the heads of departments and directors of PT XYZ, totaling five respondents. The results are analyzed using a strategy formulation matrix template.

3.2 Data Analysis

Stage 1: The initial stage is the stage of summarizing all the fundamental information required for the formulation of strategies. This stage includes the evaluation of the external factors matrix (EFE), which explains opportunities (O) and threats (T), as well as the internal evaluation matrix (IFE), which explains strengths (S) and weaknesses (W), and the competitive profit matrix (CPM).

Stage 2: The matching stage entails aligning the organization's internal resources and capabilities with the

opportunities and risks posed by external factors. This is achieved through the utilization of various analytical tools, including the SWOT matrix, Space matrix, BCG matrix, IE matrix, and Grand Strategy matrix.

Stage 3: The Decision Stage utilizes the QSPM method, which elucidates the comparative appeal of alternative strategies and provides an objective foundation for decision-making (David et al, 2023).

At this stage integrating relevant external and internal factors into the decision-making process to minimize errors in making these decisions, the elements contained in QSPM are alternative strategies, key factors, weights and Attractiveness Score is the attractiveness value TAS (Total Attractiveness Score) is the total attractiveness value, and STAS (Sum Total Attractiveness Score) is the total amount of attractiveness value.

4. RESULTS AND DISCUSSIONS

4.1 Strategy Formulation Input Stage

At this stage, the collection of basic information about opportunities and

threats is conducted using the External Factor Evaluation (EFE) matrix.

The EFE is scored (S) on a scale of 0.0 to 1.0, with 0.0 indicating that the factor is not important and 1.0 indicating that it is significant. The weight value (W) is obtained by summing the value levels assigned to each category: 1 (insignificant), 2 (quite significant), 3 (neutral), 4 (significant), and 5 (very significant). The rating is determined according to the criteria, which are as follows: 1. The level of response from the company is deemed to be insignificant; 2. The response is sufficient; 3. The response is neutral; 4. The response is important; 5. The response is very important.

The subsequent step is to determine the internal factors for PT XYZ. At this juncture, the internal factor evaluation matrix is employed to assess the strengths and weaknesses of the company to facilitate the attainment of goals. The matrix incorporates a scoring system with a weight factor of 0.0 = not important and 1.0 = very important.

Table 1. External Factor Evaluation (EFE) Matrix

External Factors	S	W	S x W
Opportunities			
1. Economic growth of ASEAN & Asia Pacific countries is a potential market for coal and power plants	0.17	4	0.68
2. Coal demand for power generation in Indonesia is expected to reach 99.6% by 2024	0.13	4	0.52
3. Coal-based electricity still plays an important role in the long term	0.13	3	0.39
4. Opportunity to expand business or assets by way of IPO	0.07	2	0.14
Threats			
1. There is a decline in coal prices, although in certain circumstances the price will fluctuate.	0.17	3	0.51
2. Setting production quotas and export restrictions	0.13	4	0.52
3. Royalty price increase	0.07	3	0.21
4. Difficult and time-consuming land acquisition process	0.13	3	0.39
	1.00		3.36

Source: Analyzed by Authors (2024)

The categories are derived from the total value level obtained from the following classification: 1 = insignificant, 2 = quite significant, 3 = neutral, 4 = significant, and 5 = very significant. The rating is determined according to the following criteria: 1. Company response is not important; 2. Company response is sufficient; 3. Company response is neutral; 4. Company response is important; 5. Company response is very important.

Based on the EFE and IFE matrices, a value of 3.33 and 3.25 was

identified. The IFE-EFE matrix method was then employed to ascertain the strategic positioning steps required, given the position of the EFE and IFE scores within this matrix. The IF and EF table indicates that the internal factors of PT XYZ are 3.33, which signifies a robust position. Similarly, the external factors of 3.25 also suggest that PT XYZ is in a favorable position, implying that it is at the point of growth and expansion.

Table 2. External Factor Evaluation (EFE) Matrix

Internal Factors		S	W	S x W
Strengths				
1.	The reputation of Gross as received (GAR) and reputable company is an asset that can be leveraged to drive sales.	0.14	4	0.56
2.	Experience and expertise in coal mining	0.11	3	0.33
3.	Considerable coal reserves	0.14	3	0.42
4.	Considerable funding capability	0.14	3	0.42
Weaknesses				
1.	Difficulty in maintaining consistent coal quality from the stick pile to the customer.	0.14	2	0.28
2.	The competence of the team related to land acquisition and land area security is not yet optimal	0.07	3	0.21
3.	Incompetent contractor partners	0.14	4	0.56
4.	Complicated land acquisition process	0.12	4	0.48
		1.00		3.26

Source: Analyzed by Authors (2024)

Table 3. Internal & External Factor Evaluation (IFE-EFE) Matrix

		Total Weighted Score IFE		
		High 3.0 to 4.0	Average 2.0 to 2.99	Weak 1.0 to 1.99
Total Weighted Score EFE	High 3.0 to 4.0	(3.36; 3.26) I Grow & Build	II Grow & Build	III Hold & Maintain
	Medium 2.0 to 2.99	IV Grow & Build	V Hold & Maintain	VI Harvest & Divest
	Low 1.0 to 1.99	VII Hold & Maintain	VIII Harvest & Divest	IX Harvest & Divest

Source: Analyzed by Authors (2024)

At this juncture, the enterprise is well-positioned to devise a strategic plan that will facilitate growth and expansion. Prior research indicates that sustainability is a pivotal aspect of strategic management, and the tools utilized to implement the strategy must be adapted to align with the organization's strategic formulation. To this end, a SWOT analysis can prove invaluable in fostering sustainable processes and facilitating the integration of cutting-edge innovations, thereby enhancing the performance of all stakeholders (Pereira et al., 2021).

4.2 Matching Stage of PT XYZ Strategy Formulation

Once the IF and EF factors have been identified, the matching stage can be entered using the SWOT matrix (Appendix 1). This allows strategies to be determined based on S-O, W-O, S-T and W-T. The S-O approach, which is often referred to as Strength-Opportunity, involves utilizing the internal strengths of PT XYZ to take advantage of opportunities in the external environment of PT XYZ (Appendix 1).

4.3 Conclusion Stage: Application of QSPM Matrix

To obtain the results in this method, several key elements are required at the decision stage. These include the initial step, namely the compilation of the strengths, internal weaknesses, opportunities and external threats of the company in the QSPM matrix column (Appendix 2). It is essential that this data is in accordance with the IFE and EFE matrix tables. Subsequently, the second step is to incorporate the weights that Sudha has identified in the IFE and EFE tables (Appendix 2).

This enables the determination of the attractiveness scores by posing the question, 'Does the strategy align with

the identified factors?' The respondents can then provide their responses using the following criteria: 1 = not attractive, 2 = slightly attractive, 3 = quite attractive, and 4 = very attractive. The third step is to calculate the total attractiveness scores by multiplying the weight values and attractiveness scores. The fourth step is to add up all the total attractiveness scores, which will define which strategy is the best.

In the preceding section, the IFE-EFE and SWOT analyses were employed to identify four alternative strategy options, which will subsequently be evaluated by the respondents. The strategies are as follows:

- ST1: Increase sales in the current periode
- ST2: strengthening coal production plans
- ST3: Make sales plans and maximize the use of coal reserves and create a long-term renewable energy plan.
- ST4: Development plan through IPO to strengthen capital acquisition and company continuity

The processed data results indicate that ST1 is 5.89, ST2 is 5.86, ST3 is 5.57, and ST4 is 5.51. Based on these results, PT XYZ is more appropriate for the ST1 strategy than the other strategies, with a value of 5.89. This aligns with the EFE/IFE method, which indicates that PT XYZ is in the Growth and Build position, and the QSPM value of 5.89 is in Strength Opportunity (SO). PT XYZ is in a position where it must pursue growth and expansion. This can be achieved by strengthening the coal production plan and paying attention to the growth in demand for coal in the ASEAN region. This will enable the company to expand its sales market abroad, as well as domestically. Furthermore, if the market is expanded,

this will not impact the rise in coal royalties, as this is aligned with the growth in sales.

PT XYZ has developed an effective business strategy, which includes a potential IPO as a means of strengthening the company. An IPO can facilitate the acquisition of additional capital and external supervision, as well as assist in the land acquisition process, which often requires considerable capital. It is necessary to fulfil some of the aforementioned factors to ensure a competitive advantage. The level of competition is typically influenced by a range of factors, including promotional activities, service quality, security and other aspects (Zahra et al., 2021).

5. CONCLUSION

The findings of this study indicate that PT XYZ must pursue a strategy of strategic development through the implementation of an S-O strategy. This entails the reinforcement of sales promotion, the formulation of a more efficacious production plan, and the consolidation of effective communication with buyers. It is recommended that a mature production plan be created and that periodic HBA checks be conducted to support the determination of the selling price of coal. Furthermore, it is advised that employee training in mining be facilitated to accelerate buyer fulfilment in production. It is recommended that a sales plan be created and that the use of coal reserves be maximized. Furthermore, a long-term renewable energy plan should be developed, and plans for an IPO should be made in order to gain access to greater funding sources and improve the company's legal status, financial position and unstructured business processes.

This research offers a direct contribution to the company PT XYZ, providing insights to enhance and sustain operational activities within the mining industry. The following suggestions are proposed for consideration:

1. It is recommended that sales be increased once more by reinforcing the marketing division or by implementing marketing strategies that can expand the market to other ASEAN regions.
2. It is further recommended that the production section be reinforced to be able to estimate the remaining coal reserves for a certain period.
3. It would be prudent to form a partnership or cooperative agreement with IUPs situated in Indonesia, with the objective of fulfilling obligations in accordance with applicable ESDM regulations.
4. The development of infrastructure in the mining area is to be initiated at the production site and subsequently extended to the port.
5. The development of the PLTU business or the management of the company's land assets
6. The resolution of disputes or claims with landowners is essential to ensure the continuity of production.
7. It is recommended that negotiations be conducted with contractors or third parties to obtain a more competitive price.
8. The tidying up of the administrative requirements for the initial public offering (IPO) of PT XYZ, both in terms of financial statements and other obligations, has been conducted in accordance with the relevant requirements.

5.1 Limitations and Further Research

In the research conducted at PT XYZ Company, the researcher has identified a need to expand the strategies that are to be selected or added to the SWOT analysis criteria. This is with a view to enabling further researchers to develop the company's strategy in terms of IPO requirements in greater detail. This will facilitate a more robust assessment of the company's readiness for an IPO, and the development of strategies that comply with relevant policies and laws.

REFERENCES

- Ansu-Mensah, P., Amoako, K. O., Marfo, E. O., & Awuah, L. S. (2021). Corporate social responsibility and stakeholder engagement in Ghana's mining sector: a case study of Newmont Ahafo mines. *International Journal of Corporate Social Responsibility*, 6(1).
- Cassidy, C. M., Capps Iii, C. J., & Glissmeyer, M. D. (2013). Mapping An Internal-External (I-E) Matrix Using Traditional and Extended Matrix Concepts. *Journal of Applied Business Research (JABR)*, 29(5), 1523.
- David, F. R., Forest, R. D., & David, M. E. (2023). *Strategic Management. Concept and Cases: A Competitive Advantage Approach 17th Edition*. Pearson Educations Limited: United Kingdom
- Hia, S. (2024). Productivity Improvement of Coal Hauling using Lean Techniques: A Case Study in Coal Mining Company in Indonesia. *Journal of Electrical Systems*, 20(4s), 850–859.
- Firky, A., Fahmi, F. Z., Maylinasari, L., & Meisaputri, R. (2022). Analisis Faktor Penyebab Eksternal dan Internal Kebangkrutan Eastman Kodak Company. *Journal of Digital Business and Innovation Management*, 1(1), 42–55.
- Fuertes, G., Alfaro, M., Vargas, M., Gutierrez, S., Ternero, R. and Sabattin, J. (2020) Conceptual Framework for the Strategic Management: A Literature Review—Descriptive. *Journal of Engineering*,
- Lindman, Å., Ranängen, H., & Kauppila, O. (2020). Guiding corporate social responsibility practice for social license to operate: A Nordic mining perspective. *The Extractive Industries and Society*, 7(3), 892–907.
- Maulana, A., Maghfiroh, A., & Farahdiansari, A. (2023). Perancangan Strategi Pemasaran Umkm Lumintu Dengan Pendekatan Metode Swot Dan Metode Quantitative Strategic Planning Matrix (QSPM). *JUSTI (Jurnal Sistem Dan Teknik Industri)*, 4(1), 23.
- Pereira, L., Pinto, M., Costa, R., Dias, Á., & Gonçalves, R. (2021). The New SWOT for a Sustainable World. *Journal of Open Innovation Technology Market and Complexity*. 7. 1-32.
- Reza, M., Hermawan, P., & Bandung, S. (2024). Optimizing Electrical System Performance at PTKP Coal Mining Company: Navigating Operational Challenges, Capitalizing on Load Growth, and Preparing for Future Energy Needs. *International Journal of Current Science Research and Review*, 07(06).
- Tkacheva, O., Topchienko, L., Zhukova, I., Smakhtina, A., & Batashova, A. (2015). Strategic Management of Coal Mining Industry Efficiency. *Asian Social Science*, 11(20).
- Wei-Skillern, J. (2004). The Evolution of Shell's Stakeholder Approach: A



Case Study. *Business Ethics Quarterly*, 14(4), 713–728.

Wulandari, T., & Ningsih, W. (2023). Kerangka Kerja Analitis Formulasi Strategi Komprehensif PT XYZ Purwakarta. *Jurnal Teknologika*. Vol 13 No. 1.

Zahra, A., Wahyudin, W., & Nugraha, B. (2021). The Implementation of the Strategy of Marketing Management through a SWOT Analysis with the Matrix of IFE, EFE and IE. *Jurnal Serambi Engineering*. 6.

Appendix 1.
SWOT Analysis Table

	Internal	
	Strengths	Weaknesss
	The reputation of Gross as received (GAR) and reputable company is an asset that can be leveraged to drive sales.	Difficulty in maintaining consistent coal quality from the stick pile to the customer.
	Experience and expertise in coal mining	The competence of the team related to land acquisition and land area security is not yet optimal
	Considerable coal reserves	Incompetent contractor partners
	Considerable funding capability	Complicated land acquisition process
Opportunities	Strategi S-O	Strategi W-O
Economic growth of ASEAN & Asia Pacific countries is a potential market for coal and power plants	Reinforce sales promotion and more effective production plan and strengthen good communication with buyers. (SO1)	Maintaining the company's good name by maintaining the quality of coal ensures that the coal taken is in accordance with the planning and is not contaminated with other materials, the separation of coal according to its quality, and other further monitoring. (WO1)
Coal demand for power generation in Indonesia is expected to reach 99.6% by 2024	Create a mature production plan and carry out periodic HBA checks to support the determination of coal selling prices by facilitating employee training in mining to accelerate buyer fulfillment in production (SO2)	Implementing soft skills training in communication, approaching the community, updating land prices in surrounding areas and strengthening the Company's capital (WO2)
Coal-based electricity still plays an important role in the long term	Making sales plans and maximizing the use of coal reserves and making long-term renewable energy plans (SO3)	Conduct vendor selection according to needs and review the contents of the agreement to be agreed upon whether it is in accordance with our needs so that it can be implemented according to the predetermined schedule, monitor the implementation of workers by contractors both directly through the head of mining engineering and supported by written reports. (WO3)
Opportunity to expand business or assets by way of IPO	Making plans for an IPO to gain greater funding opportunities, as well as improving the company's legality and finances, as well as improving all business processes that are still unstructured (SO4)	Improve the work system both operationally and administratively (WO4)
Threats	Strategi S-T	Strategi W-T
There is a decline in coal prices, although in certain circumstances the price will fluctuate	Maintaining coal quality so that it can maintain customer trust in the company and strengthen funding both through debt and open capital to the public (IPO) in the long term (ST1)	Collaborating with small miners around PT XYZ's location to reduce production costs (WT1)
Setting production quotas and export restrictions	Adjusting engineering plan and RKAB quota (ST2)	Increasing local buyers (WT2)
Royalty price increase	Make a detailed budget and reduce other costs besides royalty payments (ST3)	Budget planning must be approved at all levels up to the board of directors (WT3)
Difficult and time-consuming land acquisition process	Ensuring strong funding and making short-term sales and land acquisition plans so that the amount of costs required can be predicted (ST4)	Establish good relations with local government and residents to facilitate the negotiation process (WT4)

Source: Analyzed by Authors (2024)



Appendix 2.
 QSPM Matrix Table

Indicators	Weight	ST-1		ST-2		ST-3		ST-4	
		AS	TAS	AS	TAS	AS	TAS	AS	TAS
Strengthness									
The reputation of Gross as received (GAR) and reputable company is an asset that can be leveraged to drive sales.	0.14	3	0.42	3	0.42	4	0.56	2	0.28
Experience and expertise in coal mining	0.11	2	0.22	2	0.22	2	0.22	3	0.33
Considerable coal reserves	0.14	3	0.42	4	0.56	2	0.28	2	0.28
Considerable funding capability	0.14	3	0.42	4	0.56	2	0.28	2	0.28
Weaknesses									
Difficulty in maintaining consistent coal quality from the stick pile to the customer.	0.14	2	0.28	3	0.42	3	0.42	2	0.28
The competence of the team related to land acquisition and land area security is not yet optimal	0.07	3	0.21	2	0.14	3	0.21	3	0.21
Incompetent contractor partners	0.14	3	0.42	3	0.42	4	0.56	3	0.42
Complicated land acquisition process	0.12	3	0.36	3	0.36	4	0.48	4	0.48
Opportunities									
Economic growth of ASEAN & Asia Pacific countries is a potential market for coal and power plants	0.17	4	0.68	3	0.51	2	0.34	3	0.51
Coal demand for power generation in Indonesia is expected to reach 99.6% by 2024	0.13	3	0.39	4	0.52	4	0.52	4	0.52
Coal-based electricity still plays an important role in the long term	0.13	3	0.39	2	0.26	2	0.26	3	0.39
Opportunity to expand business or assets by way of IPO	0.07	3	0.21	3	0.21	2	0.14	2	0.14
Threats									
There is a decline in coal prices, although in certain circumstances the price will fluctuate.	0.17	4	0.68	2	0.34	3	0.51	2	0.34
Setting production quotas and export restrictions	0.13	3	0.39	3	0.39	3	0.39	3	0.39
Royalty price increase	0.07	2	0.14	2	0.14	2	0.14	2	0.14
Difficult and time-consuming land acquisition process	0.13	2	0.26	3	0.39	2	0.26	4	0.52
Total			5.89		5.86		5.57		5.51

Source: Analyzed by Authors (2024)