Studi Ilmu Manajemen dan Organisasi (SIMO)
ISSN: 2745-7826, Vol 7, No 3, 2026, 253-271 https://doi.org/10.35912/simo.v7.n3.p253-271.2026

Integrating SWOT, IE Matrix, and AHP for Competitive Strategy Prioritization: PT Furukawa Indonesia Case Study

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Article History
Received on 17 June 2026
1st Revision on 23 June 2026
2nd Revision on 11 August 2026
3rd Revision on 13 August 2026
Accepted on 18 August 2026

Abstract

Purpose: This study aims to formulate and prioritize competitive business strategies for PT Furukawa Indonesia to enhance its competitiveness in the automotive component manufacturing industry.

Research Methodology: This study employed a qualitative descriptive approach at PT Furukawa, Indonesia. Data were collected through semi-structured interviews with seven expert informants, direct observations, and company documentation. The analysis utilized the Internal Factor Evaluation, Matrix, External Factor Evaluation, Matrix, Internal–External, Matrix, SWOT Matrix, and Analytical Hierarchy Process. Microsoft Excel and Super Decisions software were used for data analysis.

Results: PT Furukawa Indonesia achieved an IFE score of 2.885 and an EFE score of 3.285, positioning the company in Cell II (Grow and Build) of the Internal–External Matrix. The SWOT analysis identified 20 strategic alternatives, which were consolidated into five main strategies. The AHP results indicated that improving product quality and capacity through integrated quality standards and production monitoring systems was the top-priority strategy, with a global priority weight of 0.267.

Conclusions: PT Furukawa Indonesia is well-positioned to implement growth-oriented strategies. Enhancing product quality and production capacity is the most appropriate strategy for strengthening competitive advantage and supporting long-term sustainability.

Limitations: This study focused on a single automotive component manufacturing company and involved a limited number of expert participants.

Contributions: This study contributes to the strategic management literature by demonstrating an integrated SWOT–IE Matrix–AHP approach for formulating and prioritizing competitive strategies in the automotive component manufacturing industry.

Keywords: *Analytical Hierarchy Process, Automotive Component Manufacturing, Competitive Strategy, Internal–External Matrix, SWOT Analysis*

How to Cite: Fauzi, M. F., & Pasaribu, R. D. (2026). Integrating SWOT, IE Matrix, and AHP for Competitive Strategy Prioritization: PT Furukawa Indonesia Case Study. *Studi Ilmu Manajemen dan Organisasi*, 7(3), 253-271.

1. Introduction

The manufacturing sector plays a significant role in supporting Indonesia economic development and industrial growth (Mulatsih, 2022). Within this sector, the automotive industry contributes substantially to investment realization, employment generation, export performance, and the development of supporting industries (Budiono, Nurcahyo, & Habiburrahman, 2021). The increasing demand for automotive products, technological advancements, and industrial transformation have intensified competition among automotive manufacturers and component suppliers, requiring companies to continuously improve their competitiveness and operational performance (Zizi et al., 2024).

In addition, the development of Industry 4.0, manufacturing digitalization, and increasingly stringent quality requirements from Original Equipment Manufacturers (OEMs) have encouraged automotive companies to improve their operational efficiency, production consistency, and technological capability. Manufacturing firms are expected to strengthen their quality management systems, optimize their operational performance, and integrate digital technologies to maintain competitiveness in dynamic business environments (Dewa & Makua, 2024; Setiawan, Rahmiati, & Soewarno, 2025).

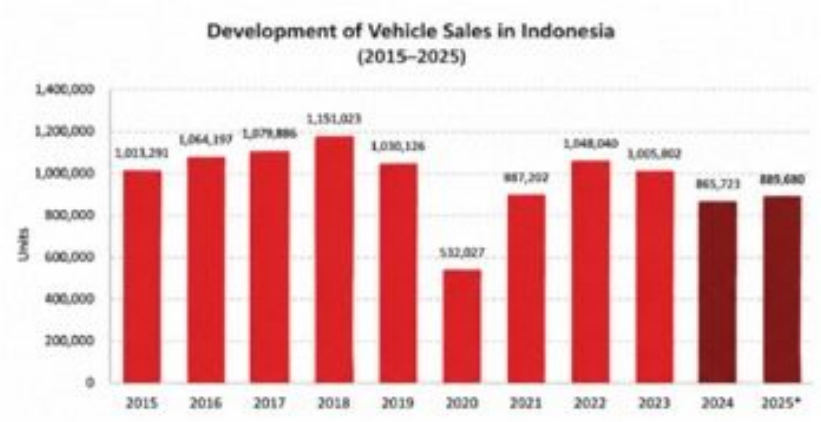


Figure 1. Development of vehicle sales in Indonesia

Figure 1 illustrates the development of vehicle sales in Indonesia from 2015 to 2025. Despite a significant decline during the COVID-19 pandemic, the national automotive market has demonstrated a gradual recovery and positive growth trend in recent years. This condition indicates continuing opportunities for automotive component manufacturers to expand their businesses and strengthen their positions within the automotive supply chain ecosystem.



Figure 2. Customer portfolio of PT Furukawa Indonesia

Figure 2 presents the customer portfolio of PT Furukawa Indonesia, which is dominated by several major automotive manufacturers, including ADM, ATI, YID, and YPMI. This composition reflects the company's dependence on Business-to-Business (B2B) relationships with OEM-related customers and highlights the importance of maintaining product quality, delivery, and operational consistency. Consequently, the company operates in a highly competitive environment in which customer requirements and performance standards continue to increase.

PT Furukawa Indonesia specializes in producing core-shell components used in automotive manufacturing processes. As part of the automotive supply chain, companies must comply with strict customer requirements related to quality standards, production consistency, operational efficiency, and delivery performance (Andjelković, Milovanović, Milanović, & Stojanović, 2025). However, the company currently faces several strategic challenges, including fluctuating production demand, increasing customer expectations, operational efficiency pressures, technological adaptation requirements, and competition among automotive component suppliers (Karabağ & Gökgür, 2023).

Strategic management emphasizes aligning an organization's resources and capabilities with external environmental conditions to maintain organizational excellence and objectives (Ubaidillah, Arifin, Mawardi, & Noerman, 2026). Strategic analysis tools such as Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis, Internal–External (IE) Matrix, and Analytical Hierarchy Process (AHP) are widely used to support strategic planning and decision-making processes by identifying strategic factors, determining organizational positions, and prioritizing strategic alternatives (Antoniadou & Kanellopoulou, 2024; Georgoulas, Koliousis, & Papadimitriou, 2023).

Although previous studies have demonstrated the usefulness of SWOT analysis, the IE Matrix, and AHP in strategic planning and manufacturing decision-making contexts (Pasaribu, Shalsabila, & Djatmiko, 2023; Qureshi, Naseem, & Ahmad, 2023), limited research has applied the integrated SWOT–IE Matrix–AHP framework to automotive shell core manufacturing companies. Existing studies primarily focus on broader manufacturing sectors and provide limited insights into strategic prioritization for suppliers facing OEM quality requirements, Industry 4.0 transformation, and adaptation to the Electric Vehicle (EV) ecosystem (Dewa & Makua, 2024). Consequently, a gap remains in understanding how these strategic tools can be integrated to support the prioritization of competitive strategies in automotive component manufacturing environments.

This study offers a novel contribution by integrating SWOT analysis, the IE Matrix, and the AHP in the context of automotive shell core manufacturing. The proposed framework not only identifies strategic alternatives but also systematically prioritizes them, providing practical guidance for strategic decision-making in automotive component manufacturing companies.

Given the exploratory nature of this qualitative case study, this research is guided by the following research question: How can the integration of SWOT Analysis, IE Matrix, and AHP be applied to formulate and prioritize competitive business strategies for PT Furukawa Indonesia? Therefore, this study aims to formulate and prioritize competitive business strategies for PT Furukawa Indonesia through the integration of SWOT analysis, the IE Matrix, and the AHP. This discovery is expected to provide practical convenience for management while contributing to strategic management in the automotive component manufacturing industry.

2. Literature Review

2.1 Strategic Management

A systematic process through which organizations devise, execute, and review decisions aimed at achieving long-term objectives and sustaining competitive advantages (David & David, 2017; Yuliana, 2020). Through strategic management, organizations can align their internal resources and capabilities with external environmental conditions, enabling them to improve organizational performance and respond effectively to market dynamics (Berisha Qehaja & Kutllovci, 2025). In the manufacturing industry, strategic management plays a crucial role in addressing increasing competition, technological advancements, and evolving customer expectations. Effective strategic management enables firms to

allocate resources efficiently, improve operational performance, and achieve strategic flexibility in responding to shifts in the industrial landscape. Consequently, organizations must continuously assess their strategic position and develop strategies that support sustainable competitiveness and long-term growth (Mahar, Zhang, Sadiq, & Gul, 2025).

2.2 Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis

A strategic management instrument serves to assess a company's internal capabilities, namely its strengths and weaknesses, along with the prospects and challenges that exist in its external environment. By examining these factors simultaneously, organizations can gain a comprehensive understanding of their strategic position and formulate appropriate actions to improve performance and competitiveness (Ayswer, Ramasamy, Anand, & Santhi, 2024).

The SWOT framework has been widely applied in strategic management studies because it supports systematic strategy formulation and organizational assessment. Previous studies indicate that SWOT analysis helps organizations develop strategies that are responsive to environmental changes and competitive pressures, particularly when integrated with decision-making methods for strategy prioritization (Pasaribu et al., 2023; Sharma & Sehrawat, 2020). Furthermore, the integration of SWOT analysis with decision-making approaches, such as AHP, has been shown to improve strategic evaluation and prioritization, particularly in manufacturing environments undergoing digital transformation (Jain, Ajmera, & Davim, 2022). SWOT analysis has also been applied to support organizational transformation initiatives by identifying strategic opportunities, challenges, and improvement priorities in dynamic business environments (Lorenza & Nur, 2026).

Although the SWOT framework provides a structured environmental assessment, it has been widely criticized in the strategic management literature for its inherent qualitative subjectivity and lack of prioritized direction. Simply listing internal and external factors does not inherently convey which strategic pathways demand urgent resource allocations. Therefore, to overcome this descriptive limitation, recent literature emphasizes the necessity of combining SWOT with multi-criteria decision-making models to mathematically quantify and prioritize the generated strategic alternatives and transform speculative insights into objective decisions.

2.3 Internal–External (IE) Matrix

The IE Matrix is a strategic analysis tool that determines an organization's strategic position by combining Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) scores (Jannah & Firdaus, 2022). The matrix provides a systematic approach for interpreting organizational conditions and identifying suitable strategies. The IE Matrix effectively bridges the gap between strategic analysis and execution by categorizing organizations into distinct strategic postures, ranging from expansion to defense. Specifically, entities situated in the 'Grow and Build' quadrant are directed toward intensive and integrative strategies, including market penetration, product and market development, and operational optimization (Dini, Janet, & Fahlevi, 2023).

2.4 Analytical Hierarchy Process (AHP)

The AHP is a multi-criteria decision-making method developed to assist decision-makers in evaluating alternatives using hierarchical structures and pairwise comparisons. This method simplifies complex decision problems by decomposing them into smaller components, enabling a systematic and objective assessment of alternatives (Li, 2021). One of the key advantages of the AHP is its ability to measure the consistency of judgments using the Consistency Ratio (CR). According to (Kaylani & Alrifai, 2026; Raed et al., 2025), a CR value below 0.10 indicates that the comparison results are sufficiently reliable and acceptable for decision-making. Consequently, AHP has been extensively applied in strategic planning, manufacturing management, supply chain decision-making, and organizational development studies. Recent studies have also demonstrated that AHP is effective in supporting strategic prioritization by evaluating multiple criteria and alternatives simultaneously, enabling organizations to identify the most appropriate improvement initiatives and resource allocation decisions (Wijaya & Siallagan, 2025).

Within an integrated strategic planning framework, the AHP serves as a rigorous mathematical filter for

qualitative management claims. While the IE matrix maps the macroeconomic posture and the SWOT matrix functions as a tactical option generator, the AHP resolves strategic ambiguity by establishing systematic pairwise priority rankings based on empirical expert consensus. Consequently, integrating AHP into environmental matrix evaluations provides a robust mechanism for bridging the gap between descriptive strategic analysis and concrete operational execution.

2.5 Manufacturing Competitiveness

Manufacturing competitiveness refers to a company's ability to achieve superior performance by delivering high-quality products, maintaining operational efficiency, responding effectively to customer requirements, and adapting to technological and market developments. In highly competitive manufacturing environments, competitiveness is influenced by multiple factors, including quality management, cost efficiency, production capability, technological innovation, and organizational responsiveness (Karabağ, & Gökgür, 2023; Pasaribu, Anggadwita, Hendayani, Kotjoprayudi, & Apiani, 2021).

The advancement of Industry 4.0 and digital manufacturing has further increased the importance of competitiveness in manufacturing industries. Companies must improve process integration, production monitoring, quality consistency, and operational flexibility to maintain sustainable competitive advantages. Previous studies suggest that manufacturing firms that continuously enhance product quality and operational capabilities are better positioned to satisfy customer requirements and strengthen their position within the global supply chains (Andjelković, Milovanović, Milanović, & Stojanović, 2025; Setiawan, Rahmiati, & Soewarno, 2025). Similar findings were reported by Akmal (2025), who emphasized that strategic prioritization supported by SWOT analysis and AHP can assist organizations in identifying digital transformation initiatives that strengthen competitiveness and long-term business performance.

2.6 Previous Empirical Result

Extensive literature confirms that merging strategic evaluation with structured decision-making tools is pivotal in enhancing an organization's competitive advantage. Pasaribu, Shalsabila, and Djatmiko (2023) applied SWOT analysis, the IE Matrix, and AHP in the manufacturing sector and found that the integration of these methods generated comprehensive and strategic recommendations. Similarly, Sharma and Sehrawat (2020) showed that combining SWOT with prioritization techniques improved the quality of strategic evaluation, while Qureshi, Naseem, and Ahmad (2023) highlighted the contribution of structured prioritization methods to manufacturing supply chain decision-making. Likewise, Arraya and Triono (2025) demonstrated that the integration of the IE Matrix and SWOT analysis effectively supports business strategy formulation by identifying an organization's strategic position and generating appropriate strategic alternatives within the manufacturing sector

Purnajuara and Basri (2025) integrated SWOT analysis and AHP to evaluate alternative solutions for supply chain challenges and demonstrated that combining strategic analysis with prioritization methods can improve decision-making effectiveness and feasibility. In addition, Lorenza and Nur (2026) applied SWOT analysis to support digital transformation initiatives and found that strategic environmental assessment can assist organizations in identifying development priorities and improving organizational performance.

Table 1. Summary of previous studies

Authors	Methods	Context	Key Findings
(Pasaribu et al., 2023)	SWOT, IE, AHP	Manufacturing	Strategic priorities and development recommendations were generated.
(Sharma & Sehrawat, 2020)	SWOT, FAHP	Manufacturing	Improved strategic evaluation and prioritization are required.
(Qureshi et al., 2023)	Delphi–AHP	Supply chain	Enhanced decision-making quality:

Authors	Methods	Context	Key Findings
(Karabağ & Gökgür, 2023)	Competitiveness analysis	Manufacturing	Quality and efficiency drive competitiveness in the industry.
(Setiawan et al., 2025)	Industry 4.0	Manufacturing	Digital integration improves competitiveness of the industry.
(Lorenza & Nur, 2026)	BPMN, SWOT Analysis	Business Digital Transformation	SWOT analysis supports organizational transformation and strategic improvement initiatives.
This Study	SWOT, IE, AHP	Automotive shell core	Prioritizes competitive strategies for PT Furukawa, Indonesia.

Furthermore, studies by Karabağ and Gökgür (2023) and Setiawan et al. (2025) emphasized the importance of product quality, operational efficiency, and digital transformation in strengthening manufacturing competitiveness. A summary of the relevant previous studies is presented in Table 1.

The reviewed studies demonstrate that SWOT analysis, the IE Matrix, and AHP are effective tools for supporting strategic planning, improving competitiveness, and organizational decision-making across various industries. However, most previous studies have focused on general manufacturing sectors, supply chains, or digital transformation initiatives. Limited research has specifically integrated SWOT analysis, the IE Matrix, and AHP in the context of automotive shell core manufacturing companies. Therefore, this study extends the existing literature by applying an integrated SWOT–IE Matrix–AHP framework to formulate and prioritize competitive strategies for PT Furukawa Indonesia while addressing challenges related to quality requirements, operational efficiency, digital transformation, and adaptation to the evolving automotive industry.

2.7 Research Gap

Although previous studies have confirmed the usefulness of SWOT analysis, the IE Matrix, and AHP in supporting strategic planning and decision-making (Pasaribu et al., 2023; Qureshi et al., 2023), limited research has integrated these three approaches within automotive component manufacturing companies, particularly in shell core manufacturers. Existing studies generally focus on broader manufacturing contexts and provide limited insights into the strategic prioritization of automotive supply chains. Furthermore, few studies have examined how manufacturing companies can simultaneously address challenges related to OEM quality requirements, operational efficiency, Industry 4.0 transformation, and adaptation to the EV ecosystem. To bridge these empirical gaps, this study proposes an integrated framework incorporating SWOT analysis, the IE Matrix, and AHP to formulate and prioritize competitive strategies for PT Furukawa Indonesia, providing a comprehensive framework for strategic decision-making in the automotive component manufacturing industry.

2.8 Conceptual Framework

This study is built upon an integrated conceptual framework that bridges internal and external environmental evaluation with multi-criteria decision-making to formulate and prioritize competitive strategies in the automotive component manufacturing industry. The structural alignment of this framework hinges on the premise that sustainable competitive advantages are realized through a dynamic fit between internal strategic capabilities and shifting external environmental conditions. Rather than operating as isolated linear tools, SWOT analysis, the IE Matrix, and AHP are utilized as interlocking strategic management mechanisms.

The framework is initialized at the input stage, using the IFE and EFE matrices to evaluate the localized internal and external dynamics. These scores are subsequently synthesized within the matching stage through the IE Matrix to identify the firm's macro-strategic posture (Grow and Build), while the SWOT matrix simultaneously generates granular tactical alternatives. Finally, to filter these descriptive options into an executable deployment schedule, the AHP is applied in the decision-making stage. By processing expert judgments through pairwise comparisons against manufacturing competitiveness criteria, such as product quality, operational efficiency, and digital transformation

readiness, the framework systematically establishes mathematically consistent priority rankings. This integrated approach ensures that the resulting strategic recommendations are both theoretically grounded and practically applicable.

3. Research Methodology

3.1 Research Design

This study employed a qualitative descriptive approach with a case study design (Nayar, 2024). A qualitative design was adopted to yield comprehensive insights into the organizational dynamics, strategic hurdles, and competitive determinants surrounding PT Furukawa, Indonesia. The case study was considered appropriate because the research focused on a single company in the automotive component manufacturing industry. This study adopted David strategic management framework, which consists of three stages: input, matching, and decision stages (David & David, 2017). These stages were integrated with SWOT analysis, the IE Matrix, and AHP to formulate and prioritize competitive business strategies.

3.2 Research Location and Object

This study was conducted at PT Furukawa Indonesia, a manufacturing company specializing in the production of shell cores for the automotive industry. The company was selected because it operates in a highly competitive business environment characterized by increasing customer requirements, operational efficiency pressures, technological developments, and market competition (Setiawan et al., 2025). This study aimed to examine the competitive business strategy of PT Furukawa Indonesia, particularly the identification of internal and external strategic factors and the prioritization of strategic alternatives to support long-term competitiveness.

3.3 Research Informants and Data Collection

A purposive sampling technique was used to select individuals directly involved in the strategic planning and decision-making framework of the company. This sampling technique was considered appropriate because the study required informants who possessed relevant knowledge, extensive practical experience, and strategic responsibilities related to the research objectives of this study. Therefore, the informants were purposively selected based on expert judgment, considering their managerial or expert positions, direct involvement in strategic decision-making, and comprehensive understanding of the company's internal and external business environments (Glenton et al., 2021).

Primary data were collected through semi-structured interviews with seven purposively selected informants based on expert judgment. The informants represented key managerial functions within PT Furukawa Indonesia, including the Director of Manufacturing, Production Manager, HR & GA Manager, Finance Manager, Sales and Purchase Staff, as well as OEM customer and competitor representatives. The selection criteria were based on each participant's strategic responsibilities, industry experience, and direct involvement in organizational decision-making.

The interviews lasted between 3 min 43 s and 20 min 47 s, with a total interview duration of approximately 91 min. To improve the credibility and trustworthiness of the findings, the interview results were triangulated through direct observation, company documents, and member checking before being analyzed using themes coding.

Table 2. Research Informants

No.	Position	Supporting Criteria	Selection Rationale
1	Director of Manufacturing	Top Management	Strategic oversight and manufacturing decision making.
2	Manager of Production	Operational Management	Expertise in production operations and process efficiency.
3	Manager of HR & GA	HR Management	Knowledge of human resource management and organizational support.

No.	Position	Supporting Criteria	Selection Rationale
4	Manager of Finance	Financial Management	Expertise in financial management and budgetary control.
5	Sales and Purchase Staff	Marketing & Supply Chain	Knowledge of customer requirements and procurement activities.
6	Automotive Industry Expert	OEM Representative	It provides the customer's perspective on product quality and performance.
7	Manager of Production	Industry Competitor	It provides insights into industry competition and competitive practices.

Table 2 presents the details of the seven informants involved in this study. The informants represent various functional areas, including manufacturing, production, human resources, finance, sales, and purchasing, as well as external industry perspectives from both customers and competitors. Their diverse backgrounds enabled the researchers to obtain comprehensive insights into the company's internal strengths and weaknesses, external opportunities and threats, and its strategic priorities. Consequently, the information gathered from these informants provided a reliable basis for conducting the SWOT analysis, determining the company's strategic position through the IE Matrix, and prioritizing strategic alternatives using the AHP.

The empirical evidence for this study was obtained from primary and secondary data sources. Primary data were collected through semi-structured interviews and direct observations involving the selected informants to explore the strategic and operational issues within the company. Secondary data were obtained from company reports, internal documents, operational records, industry reports, government publications and relevant academic literature. To enhance the credibility and validity of the findings, data triangulation was employed by cross-checking the information obtained from interviews, direct observations, and documentary evidence (Meydan & Akkas, 2024). The interview data were then transcribed and analyzed using thematic coding. The coding process involved data reduction, categorization of strategic information, identification of recurring themes related to internal strengths, weaknesses, external opportunities, and threats, and interpretation of findings to support the formulation of strategic alternatives within the SWOT framework.

3.4 Research Instruments and Software

The primary research instrument consisted of interview guidelines developed based on the strategic management framework and SWOT analysis dimensions (Bradbury & Sturm, 2024). The interview guidelines were used to identify internal strengths and weaknesses, as well as external opportunities and threats affecting PT Furukawa Indonesia.

Data processing and analysis were supported by the following: Microsoft Excel 2021 was used for the IFE and EFE matrix calculations and Super Decisions Software Version 3.2 was used for Analytical Hierarchy Process (AHP) calculations, pairwise comparisons, consistency testing, and priority ranking analysis.

3.5 Data Analysis Techniques

The data analysis process in this study followed the strategic management framework proposed by David and David (2017), which consists of three sequential stages: the input stage, matching stage, and decision stage.

Input Stage: At this stage, the internal and external strategic factors relevant to PT Furukawa Indonesia were identified and assessed. The IFE Matrix was used to evaluate the company's strengths and weaknesses, while the EFE Matrix was employed to assess opportunities and threats from the external environment. The resulting weighted scores were used to describe the company's overall strategic condition and readiness to respond to environmental challenges (Alamsyah, Lubis, & Hamdi, 2020).

Matching Stage: The matching stage focuses on determining the company's strategic position and developing appropriate strategic alternatives. The IE Matrix was applied to map the company's position based on the IFE and EFE scores obtained in the previous stage. Furthermore, SWOT analysis was conducted by combining strengths, weaknesses, opportunities, and threats to formulate strategic alternatives that align with the company's current business environment (Amirshenava & Osanloo, 2022).

Decision Stage: The final stage involved prioritizing the strategic alternatives generated from the SWOT analysis using AHP. Expert judgments were collected through pairwise comparisons to evaluate the relative importance of each criterion and strategic alternative. The reliability of these judgments was examined using the CR, where a value below 0.10 indicates an acceptable level of consistency in the decision-making process (Kaylani, & Alrifai, 2026; Raed, Salfarina, Dheyaa, & Khairi, 2025).

3.6 Research Assumptions

This study assumes that the selected informants possess sufficient knowledge, experience, and understanding of the strategic conditions of PT Furukawa Indonesia. Furthermore, it is assumed that the internal and external factors identified during the interviews accurately represent the company's business environment and can be used as a basis for strategy formulation and prioritization.

3.7 Ethical Considerations

Prior to data collection, all participants were informed about the objectives, procedures, and voluntary nature of the study before the interviews. Informed consent was obtained from all the informants, and their participation was entirely voluntary. The confidentiality and anonymity of both the respondents and company information were maintained throughout the study. All collected data were used solely for academic purposes and were analyzed and reported in a manner that protected the identity of the participants and organizations.

3.8 Research Framework

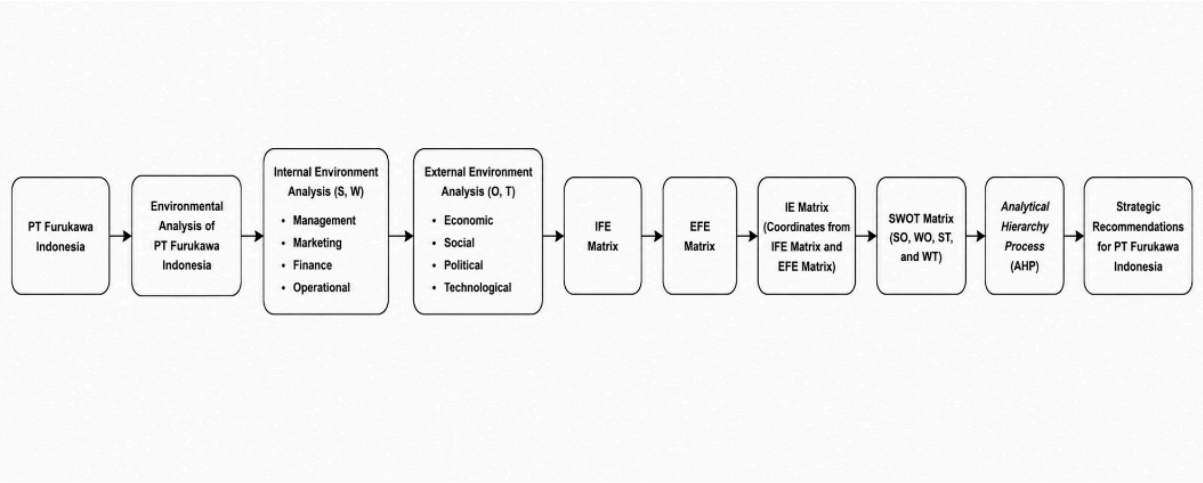


Figure 3. Strategy formulation framework

Figure 3 presents the analytical framework developed to formulate and prioritize competitive strategies for PT Furukawa Indonesia through the integration of SWOT analysis, the IE Matrix, and the AHP. The analytical framework begins with a systematic identification and evaluation of the internal and external strategic determinants influencing the enterprise. Within this structure, internal elements are delineated as strengths and weaknesses, whereas external environmental dynamics are characterized as opportunities and threats.

Subsequently, the recognized strategic determinants undergo evaluation through the IFE and EFE matrices to ascertain the firm's current strategic health. The resulting insights are then integrated into the IE Matrix to map the organization's market position, while concurrently utilizing the SWOT

Matrix to formulate viable strategic alternatives. In the final stage, the AHP was executed to rigorously assess and prioritize these generated options, culminating in actionable strategic recommendations designed to bolster the competitive advantage of PT Furukawa Indonesia.

4. Results and Discussions

4.1 Internal and External Strategic Factor Analysis

Table 3. Internal Factor Evaluation (IFE) Matrix

Internal Factors	Weight	Rating	Weighted Score
Strengths			
Implementation of ISO and SOP standards	0.096	4	0.384
Information systems support managerial decision-making	0.091	4	0.364
Production monitoring and customer service systems	0.091	4	0.364
Operational efficiency and cost control systems	0.091	4	0.364
Fast response to customer requirements	0.076	3	0.243
Weaknesses			
Inconsistent information system implementation	0.043	2	0.092
Dependence on manual operational records	0.043	2	0.092
Limited information system development	0.033	1	0.036
Limited support for EV digitalization	0.038	2	0.082
Total IFE Score	1.000		2.885

As illustrated in Table 3, the IFE Matrix for PT Furukawa Indonesia yielded a cumulative weighted score of 2.885, indicating a relatively strong internal strategic position. The company's major strengths include the implementation of ISO and SOP standards and the availability of management information systems that support production monitoring, customer service, and managerial decision making. However, these systems are primarily functional rather than fully integrated across the organizational functions. Accordingly, the identified weaknesses relate to inconsistent system implementation, continued reliance on manual operational records, limited system development, and insufficient digital capabilities to support Industry 4.0 initiatives and the transition toward the EV manufacturing ecosystem.

Table 4. External Factor Evaluation (EFE) matrix

External Factors	Weight	Rating	Weighted Score
Opportunities			
Increasing demand for automotive components	0.131	4	0.524
Long-term collaboration opportunities with OEMs	0.131	4	0.524

External Factors	Weight	Rating	Weighted Score
Manufacturing technology development	0.124	4	0.496
Market expansion opportunities	0.124	4	0.496
Threats			
Intense competition among suppliers	0.108	2	0.216
Customer price pressure	0.108	2	0.216
Raw material price fluctuations	0.105	2	0.210
Increasing quality requirements	0.131	3	0.393
Total EFE Score	1.000		3.285

Table 4 presents the results of the EFE Matrix. The company achieved a total weighted score of 3.285, indicating its strong ability to respond to external opportunities and threats. The most significant opportunities include the increasing demand for automotive components, collaboration opportunities with OEM companies, technological advancements, and market expansion opportunities. The major threats include intense competition, customer price pressure, raw material price fluctuations, and increasing quality requirements.

4.2 Strategic Position Analysis

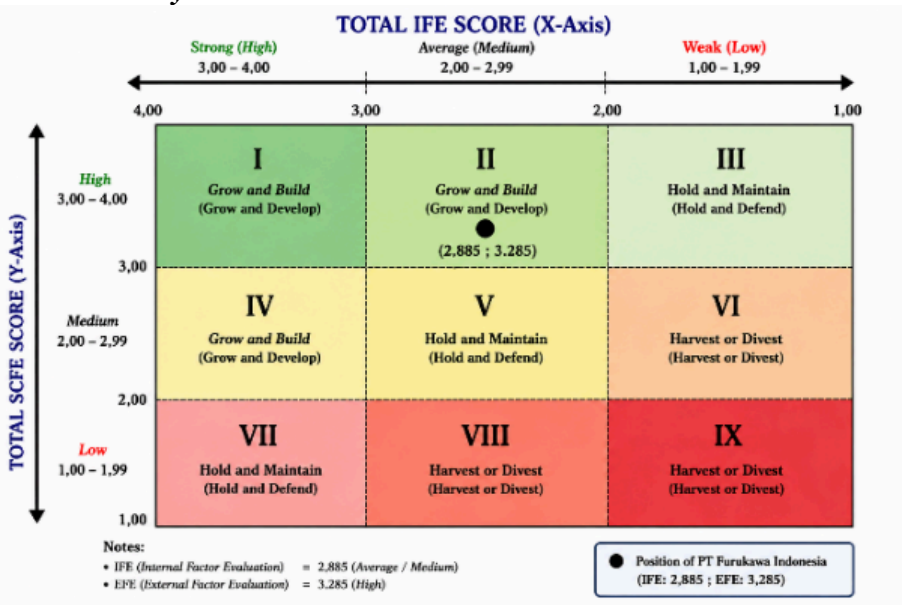


Figure 4. Internal–External (IE) matrix

As illustrated in Figure 4, the intersection of an IFE score of 2.885 and an EFE score of 3.285 places PT Furukawa Indonesia in Cell II of the IE Matrix. According to (David, David, & David, 2023), this specific quadrant denotes a 'Grow and Build' posture. Consequently, the organization is strategically positioned to execute expansionary initiatives, particularly market penetration and product development, alongside continuous operational enhancement.

4.3 Competitive Strategy Formulation

By synthesizing the previously identified internal attributes (strengths and weaknesses) with external environmental dynamics (opportunities and threats), the SWOT analysis yielded 20 distinct strategic alternatives for the company. This comprehensive matrix comprises four SO, five WO, five ST, and six

WT strategies. These pathways are specifically designed to target critical operational and strategic areas, namely production quality, operational efficiency, client relationships, information system integration, digital transformation, and long-term business sustainability.

Considering the large number of strategic alternatives generated, similar strategies were subsequently consolidated into broader strategic themes to facilitate prioritization using the AHP (Pasaribu et al., 2021). The grouping process resulted in five main strategic alternatives, representing the most relevant strategic directions for PT Furukawa Indonesia.

Table 5. Main strategic alternatives

Code	Strategic Alternative
AS1	Improving production quality and capacity through integrated quality standards and production monitoring systems
AS2	Strengthening long-term relationships with OEM customers through information systems and responsiveness
AS3	Optimizing SAP utilization and functional integration to improve operational efficiency
AS4	Developing information systems to support digital transformation and EV adaptation
AS5	Improving system integration and operational discipline to ensure quality consistency and delivery reliability

Table 5 outlines the five primary strategic alternatives derived from the SWOT Matrix. To streamline the subsequent evaluation and prioritization stages, the alternatives were clustered into overarching strategic themes.

4.4 Competitive Strategy Prioritization Using AHP

The AHP was employed to determine the priority strategy among the five strategic alternatives generated from SWOT analysis. The hierarchy consisted of three levels: strategic objectives, evaluation criteria, and strategic alternatives.

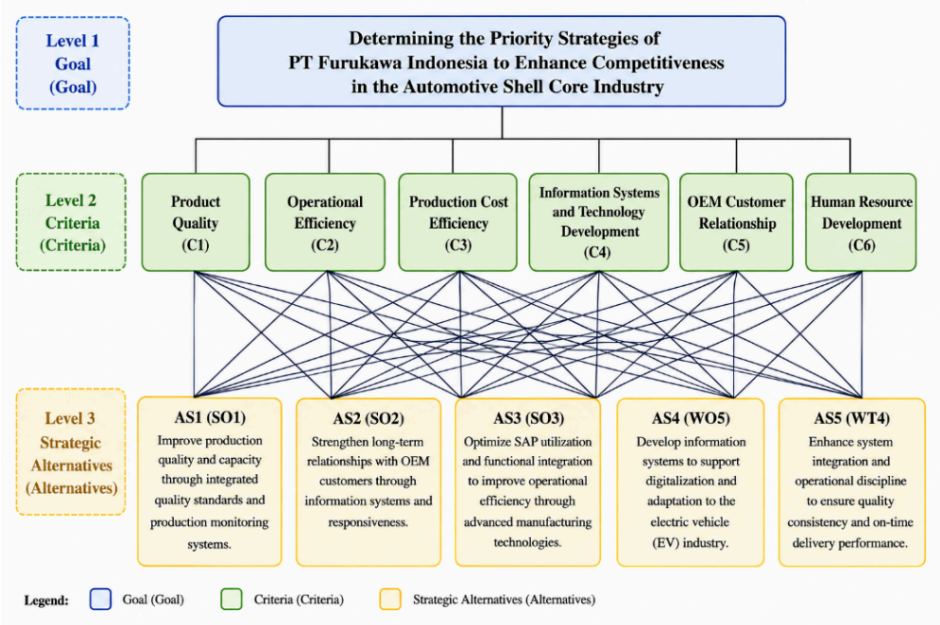


Figure 5. AHP hierarchy structure

Figure 5 shows the hierarchical structure used in the AHP analysis. The hierarchy consists of three levels: The first level represents the research objective, namely, determining the priority strategy for PT Furukawa Indonesia to enhance its competitiveness in the automotive shell core industry. The second level consists of six evaluation criteria, and the third level contains the five strategic alternatives generated from the SWOT analysis.

Table 6. Global priority ranking of strategic alternatives

Rank	Strategy Code	Strategic Alternative	Weight
1	AS1	Improving production quality and capacity through integrated quality standards and production monitoring systems	0.267
2	AS3	Optimizing SAP utilization and functional integration to improve operational efficiency	0.253
3	AS2	Strengthening long-term relationships with OEM customers through information systems and responsiveness	0.244
4	AS4	Developing information systems to support digital transformation and EV adaptation	0.136
5	AS5	Improving system integration and operational discipline to ensure quality consistency and delivery reliability	0.103

Table 6 shows the final ranking of the strategic alternatives based on the AHP analysis. The results indicate that AS1, which involves improving production quality and capacity through integrated quality standards and production monitoring systems, obtained the highest priority weight of 0.267. This finding suggests that quality improvement and production capability enhancement should be the primary strategic focus of PT Furukawa Indonesia. The second-ranked strategy was AS3, with a weight of 0.253, followed by AS2, with a weight of 0.244. Meanwhile, AS4 and AS5 received lower priority weights but remained important supporting strategies for digital transformation, EV adaptation, and operational consistency. This finding is consistent with the interview results of this study. The Sales and Purchase Staff explained, "PT Furukawa Indonesia consistently prioritizes customer satisfaction by focusing on customer needs, continuously improving product quality, implementing the ISO 9001 quality management system, and delivering products based on the principles of Safety, Quality, Cost, and Delivery (SQCD)."

Table 7. Consistency test results

Parameter	Value
λmax	6.21
CI (Consistency Index)	0.042
RI (Random Index)	1.24
CR (Consistency Ratio)	0.034

Table 7 presents the consistency test results of the AHP analysis. The CR value obtained was 0.034, which is below the maximum acceptable threshold of 0.10 proposed by (Kaylani & Alrifai, 2026; Raed et al., 2025). This result indicates that the expert judgments used in the pairwise comparison process were consistent and reliable. The low CR value also demonstrates that the experts showed a high level of agreement regarding the relative importance of the evaluation criteria and the strategic alternatives. Consequently, the resulting priority weights can be interpreted with confidence and provide a robust basis for selecting the most appropriate competitive strategy for PT Furukawa Indonesia.

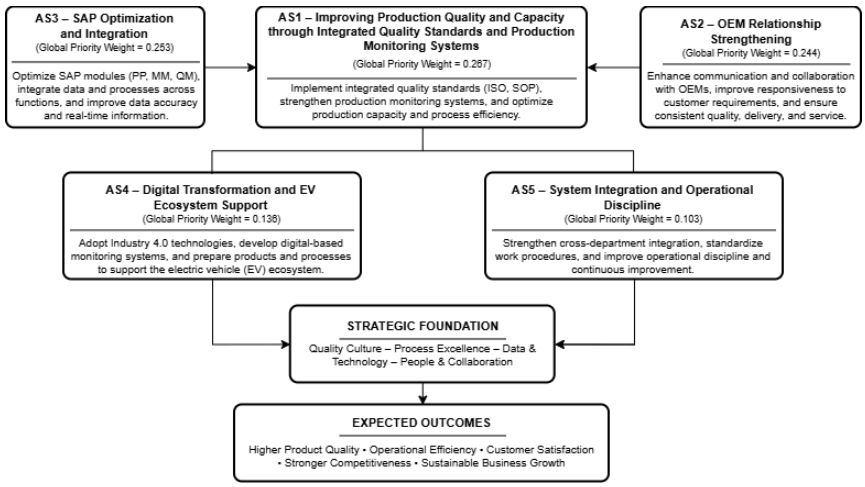


Figure 6. Strategic priority framework of PT Furukawa Indonesia

Figure 6 illustrates the strategic priority framework derived from the integrated SWOT–IE Matrix–AHP analysis. The prioritization results indicate that improving production quality and capacity through integrated quality standards and production monitoring systems (AS1) is the most critical strategy, reflecting the company's need to consistently meet OEM quality requirements while enhancing operational performance. Rather than representing independent initiatives, the remaining strategies function as complementary enablers of AS1. Strengthening relationships with OEM customers (AS2) supports market sustainability and customer trust, whereas SAP optimization and information system integration (AS3) enhance decision-making and operational efficiency. Furthermore, digital transformation and support for the EV ecosystem (AS4) prepare the company to respond to future technological changes, whereas strengthening system integration and operational discipline (AS5) reinforces the organizational capability and execution consistency. Collectively, these strategies form an integrated strategic framework that enhances product quality, operational excellence, customer satisfaction, and long-term competitiveness at PT Furukawa Indonesia (Jain et al., 2022; Pasaribu et al., 2023; Setiawan et al., 2025).

4.5 Discussion

The results indicate that PT Furukawa Indonesia possesses relatively strong internal capabilities and favorable external opportunities, as reflected by the IFE score of 2.885 and EFE score of 3.285. Based on the IE Matrix, the company is positioned in Cell II (Grow and Build), indicating that growth-oriented strategies are appropriate for enhancing competitiveness and supporting long-term business sustainability. According to (David & David, 2017), organizations within this strategic position are encouraged to emphasize operational improvement, capability enhancement, and business growth. Consistent with this strategic position, the SWOT analysis generated 20 strategic alternatives, which were subsequently synthesized into five principal strategic alternatives to facilitate prioritization and managerial decision-making.

The AHP analysis revealed that improving production quality and capacity through integrated quality standards and production monitoring systems (AS1) was the highest-priority strategy. This finding indicates that production quality, operational capability, and process reliability are the primary sources of competitive advantage in automotive component manufacturing companies. In industries characterized by increasingly stringent OEM quality requirements, companies that consistently improve production quality, operational efficiency, and manufacturing capabilities are better positioned to sustain customer confidence and long-term competitiveness. This interpretation is supported by (Sahoo, 2021), who demonstrated that process quality management significantly improves operational performance, and (Chau, Tang, Liu, Ip, & Tao, 2021), who identified quality management, information system capability, and process integration as critical factors in strengthening manufacturing competitiveness. These findings also reinforce the results of (Putri & Utama, 2024), who emphasized that improvements in operational reliability and production performance are essential for increasing manufacturing effectiveness. Therefore, strengthening production quality and

capacity is a strategic necessity for maintaining long-term collaboration with OEM customers and sustaining business growth. This interpretation is further supported by the interview results. The Sales and Purchase Staff explained, *"PT Furukawa Indonesia consistently prioritizes customer satisfaction through continuous product quality improvement, implementation of the ISO 9001 quality management system, and adherence to the principles of Safety, Quality, Cost, and Delivery (SQCD)."*

Although SAP optimization and information system integration (AS3) obtained a priority weight of 0.253, only slightly higher than strengthening relationships with OEM customers (AS2) with a priority weight of 0.244, the difference of 0.009 reflects the role of information systems as an enabling capability rather than a stand-alone competitive strategy. The optimization of SAP and production monitoring systems enables more accurate production planning, inventory management, quality monitoring, and cross-functional coordination, thereby providing timely and reliable information for managerial decision making. Consequently, strengthening internal information systems establishes a stronger operational foundation before expanding external relationship management with OEM customers. This explains why AS3 was prioritized ahead of AS2, despite the relatively small difference in priority weight. Furthermore, although digital transformation and EV ecosystem support (AS4) received a lower priority weight, this strategy remains essential for improving long-term competitiveness by enhancing organizational readiness for Industry 4.0 technologies and transitioning toward the electric vehicle manufacturing ecosystem, which is consistent with the findings of (Akmal, 2025).

The findings of this study are generally consistent with those of previous studies. (Pasaribu et al., 2023) demonstrated that integrating SWOT analysis, the IE Matrix, and AHP produces systematic and actionable strategic priorities for organizational development. Likewise, (Jain et al., 2022) concluded that the integration of SWOT and AHP enhances strategic evaluation and prioritization, particularly in manufacturing companies facing technological transformation. Furthermore, the emphasis on production quality, operational capability, information system integration, and continuous improvement supports the findings of (Setiawan et al., 2025), who highlighted these factors as essential drivers of competitiveness in the automotive manufacturing industry. Compared with previous studies, this research extends the application of the integrated SWOT–IE Matrix–AHP framework by demonstrating how strategic priorities can be systematically formulated and ranked within an automotive shell core manufacturing company operating under OEM quality requirements while simultaneously preparing for Industry 4.0 implementation and the EV ecosystem.

From a managerial perspective, the findings provide practical guidance for PT Furukawa Indonesia in determining its strategic investment priorities. Management should initially concentrate on improving production quality and capacity through stricter quality management implementation, production monitoring enhancement, and continuous operational improvement. Subsequently, SAP optimization and cross-functional information system integration should be strengthened to improve data accuracy, production control, and strategic decision-making. These internal improvements will provide a stronger operational basis for reinforcing long-term collaboration with OEM customers through consistent product quality, reliable delivery, and responsive customer service. This managerial priority is consistent with customer expectations. The OEM Customer Representative stated, *"Suppliers are expected to consistently maintain product quality, including defect rates, dimensional precision, and delivery performance. Failure to meet these standards may result in supplier evaluation or replacement."* In parallel, digital transformation initiatives should continue to be implemented gradually to strengthen organizational readiness for Industry 4.0 technologies and the electric vehicle ecosystem. Accordingly, the integration of SWOT analysis, the IE Matrix, and AHP not only supports systematic strategic prioritization but also offers a practical decision-making framework for enhancing operational excellence, customer satisfaction, and sustainable competitiveness in automotive component manufacturing.

4.6 Theoretical Implications

This study contributes to the strategic management literature by demonstrating that integrating SWOT analysis, the Internal–External (IE) Matrix, and the Analytical Hierarchy Process (AHP) provides a

systematic framework for identifying, evaluating, and prioritizing competitive strategies in the automotive component manufacturing industry. Unlike previous studies that generally applied these methods separately or within broader manufacturing contexts, this study demonstrates how their integration can support strategic decision-making in shell core manufacturing companies operating under stringent OEM quality requirements.

Furthermore, this study extends the application of strategic management theory by highlighting the interaction between internal capabilities, external environmental conditions, and multi-criteria decision-making in determining the competitive priorities. The findings emphasize that production quality, operational capability, and customer-oriented strategies remain the primary sources of competitive advantage for OEM-oriented manufacturers. Consequently, this study enriches the literature on strategic management by providing empirical evidence regarding the application of an integrated SWOT–IE Matrix–AHP framework within business-to-business automotive manufacturing environments.

4.7 Managerial Implications

From a managerial perspective, the findings suggest that PT Furukawa Indonesia should prioritize improvements in production quality and capacity through integrated quality standards, continuous production monitoring, and disciplined operational control. As production quality received the highest strategic priority, management should strengthen preventive quality management practices while maintaining compliance with OEM quality standards.

In addition, the company should optimize SAP utilization and improve functional integration across the production, quality, logistics, finance, and sales departments to enhance operational efficiency and information accuracy. Strengthening long-term relationships with OEM customers through rapid responsiveness, reliable delivery performance, and continuous communication is essential for sustaining customer trust and business continuity.

Finally, management should continue investing in information systems and digital technologies to support Industry 4.0 implementation and organizational readiness for the electric vehicle (EV) ecosystem. These initiatives are expected to improve operational flexibility, strengthen organizational competitiveness, and support sustainable business growth in the increasingly dynamic automotive component industry.

5. Conclusions

5.1 Conclusion

This study aimed to formulate and prioritize competitive business strategies for PT Furukawa Indonesia by integrating SWOT analysis, the IE Matrix, and the AHP. The results showed that PT Furukawa Indonesia obtained an IFE score of 2.885 and an EFE score of 3.285, indicating relatively strong internal capabilities and a favorable external position. Based on the IE Matrix, the company is positioned in Cell II (Grow and Build), suggesting that growth-oriented strategies are appropriate to strengthen competitiveness and support business sustainability.

Furthermore, the SWOT analysis generated 20 strategic alternatives, which were consolidated into five main strategic alternatives. The AHP analysis identified AS1, namely, improving production quality and capacity through integrated quality standards and production monitoring systems, as the highest-priority strategy, with a weight of 0.267. The findings indicate that strengthening quality management and production capability should be the primary strategic focus of PT Furukawa Indonesia to enhance competitiveness and support future business growth.

5.2 Research Limitations

This study had several limitations. First, the research was conducted using a single case study approach, focusing only on PT Furukawa Indonesia, which may limit the generalizability of the findings. Second, the evaluation of strategic factors relied on expert judgment and managerial perceptions, which may have introduced subjectivity into the analysis. Third, this study focused on

strategy formulation and prioritization without evaluating the implementation of the selected strategies.

5.3 Suggestions and Directions for Future Research

The findings suggest that PT Furukawa Indonesia must focus primarily on quality optimization and volume capacity enhancement, alongside sustained efforts in streamlining operations and improving customer relations. Additionally, accelerating digital adoption will be critical to sustaining future positioning and successfully navigating the ongoing transition toward the EV ecosystem.

Future research should involve multiple companies within the automotive manufacturing sector to improve the generalizability of the findings. Researchers may also integrate additional strategic tools, such as the Quantitative Strategic Planning Matrix (QSPM), Balanced Scorecard (BSC), or Business Model Canvas (BMC), to provide a more comprehensive strategic evaluation and implementation assessment.

Acknowledgement

The authors express their profound gratitude to PT Furukawa Indonesia for the invaluable support, data provisioning, and institutional access granted throughout this study. The authors also thank all the respondents and experts who contributed their knowledge and insights during data collection and analysis.

Author Contributions

The individual contributions of the authors are outlined as MFF was responsible for the conceptual framework, research design, data collection, analytical processing, and primary drafting of the manuscript. RDP provided comprehensive research supervision, methodological guidance, data validation, and critical revisions of the text. Both authors have reviewed, verified, and granted final approval for the current version of the manuscript and accept full accountability for the entirety of the work.

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