

NVIVO ANALYSIS

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Abstrac. PT. Sarana Baja hopes to maintain its highly competitive position in the steel industry and support Surabaya's economic growth by using the Nvivo method. In this study, data processing was carried out with one approach. Data came from interviews with informants and also from secondary sources, then processed using NVIVO 12 Plus software. Data collected from interviews are analyzed and compared with researcher interviews to other sources. The things that are checked are data accuracy, data collection and testing. Data collected from interviews are analyzed and compared with researcher interviews to other sources. From this comparison, similarities in information from different research subjects are obtained, so that it can strengthen the researcher's belief that the information provided is valid. The interview data is also compared with secondary data obtained by researchers through scientific journals, previous research and field observations, where there is a match between primary data and secondary data. Nvivo also helps companies adjust strategies to market conditions and available resources, so that they can increase the competitiveness and added value of steel products in the global market.

Keywords: *Analysis, NVIVO*

INTRODUCTION

Steel manufacturing company PT. Sarana Baja is located in Surabaya, East Java, and focuses on the manufacture of various types of steel such as sheet steel, bar steel, and hollow steel used in construction and other manufacturing industries. PT. Sarana Baja has a strategic role in meeting the need for high-quality steel in the local and national markets.

PT. Sarana Baja faces the challenge of optimizing the production process in order to meet production targets while minimizing costs. In addition, the company must manage limited resources, such as machine capacity, labor, and raw materials, effectively in order to always be able to compete in an increasingly competitive market.

PT. Sarana Baja requires a production planning method that is able to allocate resources effectively, meet market demand, and maximize company profits. Linear *programming* is one of the best methods to solve this problem because it allows the company to determine the optimal production combination based on various existing constraints, such as costs, production capacity, and market demand.

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industry and support Surabaya's economic growth by using the Nvivo method.

Problem Formulation

Based on the information above, it shows the formulation of the problems faced by the company as follows: How does the company manage its production costs in order to achieve efficiency and increase its competitiveness?

Writing purpose

This study aims to determine how companies manage production costs in order to achieve efficiency and increase competitiveness.

RESEARCH METHOD**Using Nvivo**

Researchers conducted interviews with informants using semi-structured interviews, meaning that interviews were conducted by preparing questions to be asked to informants. Researchers tried to get informants to provide their ideas and opinions about the research object. Researchers used voice recorders, cameras, and notebooks to help researchers make interview transcripts. The results of these interviews will later be processed using software NVIVO.

Data Processing Techniques

In this study, data processing was carried out with one approach. Data came from interviews with informants and also from secondary sources, then processed using NVIVO 12 Plus software. NVIVO is used to manage qualitative data with efficiency and effectiveness. The data processing process begins by grouping data sources, such as from books, documents, journals, interview results, and websites. The data is then entered into NVIVO based on the type of source. The next stage is to code the data, namely classifying data according to sub-themes in writing. Through this coding process, the results of data analysis from research questions can be seen.

Data Processing Stage

Implementation in the primary and secondary data processing stages using *software NVIVO* is implemented with the following stages:

- a. Arranging transcripts of interview data from sources into a format *Microsoft word*. The researcher compiled all the information that had been collected through interviews with sources into a

form *Microsoft Word* to make it easier in the next stage.

- b. Interview transcript data, scientific journals and previous research are stored in folder *files software NVIVO*. Researchers at this stage create a name *project by* giving the research a name according to the researcher's objectives through *creating a new project*.

Data analysis

Researchers carry out the analysis by triangulation sources to test related to data credibility by collaborating data obtained from various sources. The things that are checked are data accuracy, data collection and testing. Data collected from interviews are analyzed and compared with researcher interviews to other sources. From this comparison, similarities in information from different research subjects are obtained, so that it can strengthen the researcher's belief that the information provided is valid. The interview data is also compared with secondary data obtained by researchers through scientific journals, previous research and field observations, where there is a match between primary data and secondary data.

Case / Report

⊕	Name	Files	References
📁	Informan 2_direktur Finance	1	1
📁	Informan 3_Finance	1	1
📁	Wawancara Informan 1	1	1

Figure 1. Informant

Codes

	1	2
Kendala yang berpotensi pada Biaya Produksi	3	3
Hutang	1	1
Perubahan Dollar	3	4
Supply Chain	1	1
Menjaga Efisiensi	3	3
Koordinasi Meeting	3	3
Pemilihan Suplier	1	1

⊕	Name	Files	Referenc
⊖	○ Apa Yang Harus Diantisipasi	3	3
	○ Consumer Behavior	1	1
	○ Instrumen Hedging	1	1
	○ Managemen Arus Kas	1	1
	○ Pergerakan Pasar	3	3
⊖	○ Bagaimana Harapan Kedepan Agar memiliki Day	3	3
	○ Efisiensi	3	3
	○ Kualitas Tinggi	1	1
	○ RnD	1	1
⊖	○ Biaya Biaya Produksi diPerusahaan dan efisiensi	3	3
	○ Audit	2	2
	○ Operasional	3	3

Figure 2. Codes

Overall



Figure 3. Visualization *Text Search* “Overall View”

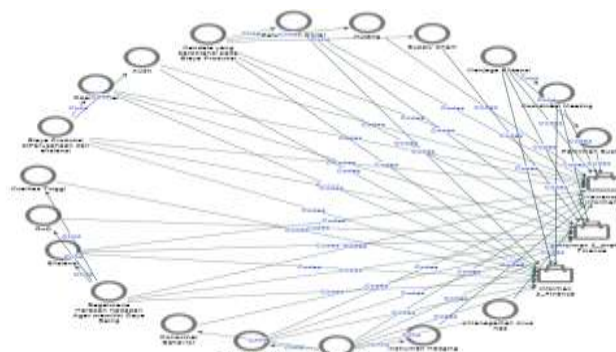


Figure 4. “Overall View”

What To Anticipate



Figure 5. Visualization *Text Search* “Anticipation of Something”

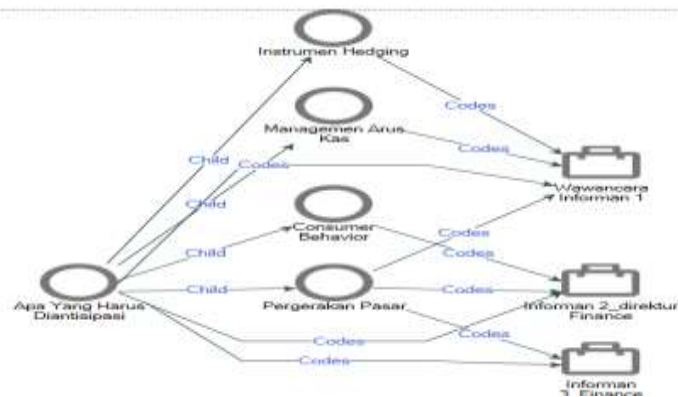


Figure 6. “Anticipation of Something”

- Hedging Instruments
- Cash Flow Management
- Consumer Behavior
- Market Movement

6. Price, rise, market, cost, purchasing power, etc. – Indicates attention to market dynamics and economic influences.

Word Cloud Conclusion:

There is a dominant concern regarding market dynamics (prices, contracts, exchange rates), and how this impacts consumers. Words such as “analyze,” “anticipate,” and “consider” indicate that businesses are mitigating risk through a strategic approach.

Word Cloud Analysis

Word clouds show the frequency of occurrence of words in interview data or qualitative documents. The larger the word size, the more frequently the word appears and is considered important by respondents.

Dominant Key Words:

1. Contract – The most dominant word, indicating that contractual issues are a primary concern.
2. Consumer – Significant focus on consumer behavior, needs, or responses.
3. Analysis – Indicates a need or activity related to market or situation analysis.
4. Dollar – Emphasis on foreign exchange rates (possible exchange rate risk).
5. Anticipate, consider – Indicates that predictive strategies or planning are important topics.

Node Hierarchy Visualization Analysis and Coding

The second image is the result of theme mapping using NVivo, with a thematic coding structure. This analysis illustrates the relationship between the main themes of the interview.

Thematic Structure:

a. Main Theme: What to Anticipate

- It is the root node, indicating the main focus of the interview.
 - b. Subtema/Subnode (Child):
 - 0. Hedging Instruments
 - Relating to the management of exchange rate or financial risks.
 - 1. Cash Flow Management
 - Strategy to maintain smooth financial operations.
 - 2. Consumer Behavior
 - Relates to how consumers respond to market dynamics.
 - 3. Market Movement
 - Fluctuations in prices, demand, or other external conditions.
- Relationship with Informant:

- c. The three sub themes were coded from interviews with:
 1. Informant 1 → focuses on financial instruments and cash flow management.
 2. Informant 2 (Finance Director) and Informant 3 → focus on market movements and consumer behavior.

Thematic search shows that what *to anticipate by* the company covers four strategic areas: market fluctuations, consumer response, cash flow management, and the use of hedging. This shows that anticipating financial risks and adapting to market dynamics are core strategies in decision making.

What are the Future Hopes for Competitiveness?



Figure 7. Visualization Text Search "What are the Future Hopes for Competitiveness"

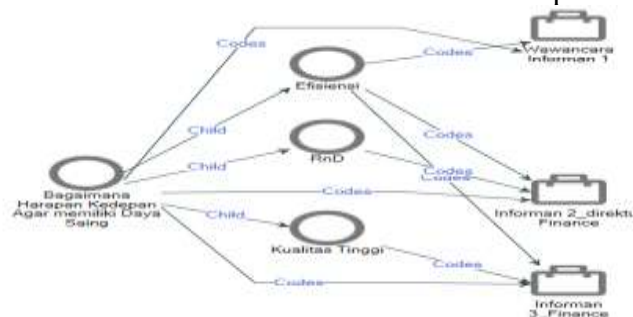


Figure 8. "What are the Future Hopes for Competitiveness"

- a. Efficiency
- b. RnD (Rise & Development)
- c. High quality

Word Cloud Analysis

This word cloud shows the main themes from respondents' answers

regarding future strategies to increase competitiveness.

Key Words That Stand Out:

1. Competitiveness – The most dominant word, according to the focus of the interview question.

2. Product, quality, has – Shows the hope that the product produced can compete through superior quality.
3. Reduce costs, efficiency, efficiency – Important indicators of operational efficiency and production costs.
4. RnD, development, industry, competitive – Leading to the need for innovation and research as a long-term strategy.
5. Market share, price, profit – Focus on improving market position and profitability.

Word Cloud Conclusion:

Future strategies that were considered important by informants were:

- Cost and operational efficiency.
- Improve product quality.
- Investment in research and development (RnD).
- Reducing dependence on imports and increasing the competitiveness of the domestic market.

Image Visualization Analysis 2

This diagram visualizes the coding results of the theme: "How to Expect Future Competitiveness".

Thematic Structure:

- Main Theme: How to Expect Future Competitiveness
- Subtema/Subnode (Child):
 1. Efficiency
 - Emerged from all informants (1, 2, 3), indicating this as a central strategy.
 2. RnD (Research and Development)
 - Subtheme of efficiency; shows the importance of

product and process innovation.

3. High quality
 - Considered the key to winning the market and maintaining consumer loyalty.

Relationship with Informants:

- All informants (including the finance director) emphasized efficiency as the main foundation of future strategy.
- Informants 2 and 3 linked efficiencies to innovation/RnD and high-quality products, indicating a long-term strategic perspective.

From the two visual data, it can be concluded that:

1. Future Competitiveness Strategy

Focus:

- Efficiency → Includes cost reduction and operational process improvement.
- Product Quality → Key to maintaining and expanding the market.
- Investment in RnD → For product and production process innovation.
- Increasing local added value → Reducing dependence on imports.

2. Collective Informant Expectations:

- Competitiveness must be built through a combination of internal efficiency and the creation of innovative, high-quality products.
- There is an urgency to respond quickly to the market, while maintaining profitability.

Production Costs in Companies and Efficiency



Figure 9. Visualization Text Search “Production Costs in Companies and Efficiency”

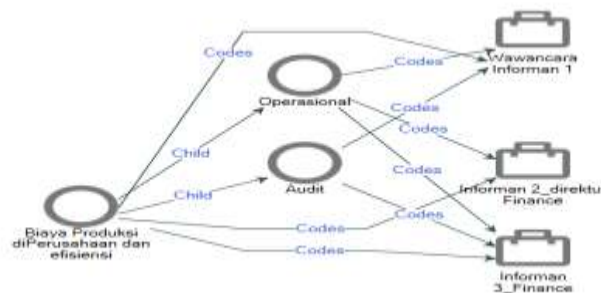


Figure 10. “Production Costs in Companies and Efficiency”

Word Cloud Analysis

Word clouds show the frequency of occurrence of words in interview data or qualitative documents. The larger the word size, the more frequently the word appears and is considered important by respondents.

Dominant Key Words:

- Cost – The most dominant word, indicating that cost control is the primary concern in the discussion.
- Production – Indicates that the context of the cost discussion is within the company's production activities.
- Materials – Shows the importance of raw materials management as the largest component of production costs.
- Work – Relating to labor efficiency, time management, and productivity.
- Company – Emphasizes that the interview focuses on the company's internal strategy.
- Forecasting, manpower, auditing, operational, and overhead – Indicates attention to efficiency,

cost planning, and evaluation in the production structure.

Word Cloud Conclusion:

Interviews consistently emphasized the importance of costs and production, with a primary focus on materials and labor. Words such as “audit,” “prediction,” and “overhead” indicate that the company is not only concerned with direct expenses, but also places a great deal of emphasis on efficiency and control of indirect costs.

NVivo Visualization Analysis (Node Hierarchy and Coding)

The second image is the result of theme mapping using NVivo, with a thematic coding structure. This analysis illustrates the relationship between the main themes from the informant interviews.

Thematic Structure:

Main Theme: Production Cost in Companies and Efficiency

This theme serves as the root node, describing the main focus of the

interview: how companies manage production costs to achieve efficiency.

Subtema/Subnode (Child):

- Operational
 - Relating to the efficiency of daily production processes, including the use of raw materials, machines, human resources, and energy.
 - Includes optimization and waste reduction strategies.
 - Audit
 - Highlights the importance of cost evaluation, both through internal and external audits.
 - Used to identify areas of waste and ensure transparent cost control.
- Relationship with Informant:
- Informant 1
 - Provides a lot of insight into direct operational practices, such as how efficiencies can be achieved in the field.
 - Informant 2 (Finance Director)
 - Deliver macro cost control strategies, such as energy savings, raw material budget management, and overall efficiency policies.
 - Informant 3 (Finance Staff)
 - Focus on the implementation of internal audits and how audits are used as a tool for production cost efficiency.

NVivo Coding Conclusion:

The thematic structure shows two main pillars of the production cost efficiency strategy, namely

increasing operational efficiency and strengthening the audit function. These two strategies complement each other in creating a cost-effective, adaptive and accountable production system.

✦ General Conclusion

Based on two visual data (word cloud and NVivo coding tree), it can be concluded:

- The main issue in the interview was production cost control, with a focus on raw material efficiency and work operations.
- The main strategies undertaken by the organization include:
 - Optimization of operational processes (power, materials, energy).
 - Internal audit as a tool for evaluating efficiency.
 - Strategic cost prediction and planning.
- Companies strive to manage direct and indirect costs to increase profitability and competitiveness.

The main objectives of this strategy are:
Realizing overall cost efficiency by strengthening production management and internal supervision, so as to create a healthier and more adaptive cost structure to industry challenges.

Potential Constraints on Production Costs



Figure 11. Visualization Text Search “Potential constraints on Production Costs”

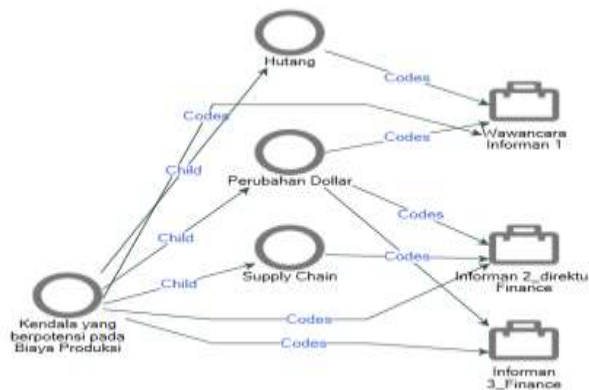


Figure 12. Potential constraints on Production Costs

Word Cloud Analysis

Word clouds depict the most frequently occurring words in qualitative interviews or documents. The larger the word size, the more frequently the word appears, indicating its importance in the context of the discussion.

Dominant Key Words:

- Cost – Emerging as the most dominant word, confirms that the main issues in the interviews were related to efficiency and control of production costs.
- Price – Another big word that indicates concern about price fluctuations, especially of raw materials or production components.
- Rise / Increase / Rising – Describes the trend of increasing prices or costs, whether from the side of materials, transportation, or external influences.

- Company – Indicates that the strategies or constraints discussed are always linked to the company's internal conditions.
- Constraints – Leads to the recognition of barriers that have a direct impact on operational costs.
- Dollar, change, pressure – Indicates that exchange rates and global volatility are external factors that also affect production costs.
- Chain, supply, raw materials – Shows issues in the supply chain as significant factors that create production risks.

NVivo Visualization Analysis (Node Hierarchy and Coding)

The second figure shows the thematic structure resulting from the mapping using NVivo, focusing on potential constraints on production costs. This theme is broken down into three main subthemes derived from interviews with three informants.

Thematic Structure:

- **Main Theme: Potential Constraints on Production Costs**
This is a core topic, drawing attention to the various challenges that impact corporate spending.
- Subtema/Subnode (Child):**
1. Debt
 - Refers to the pressure from financial obligations that can limit cost flexibility and investment decision making.
 - It is mentioned in the context of how debt can impact fixed cost structure and interest risk.
 2. Dollar Changes
 - Represents exchange rate risk that impacts purchases of imported raw materials or foreign contracts.
 - Included in the discussion with Informants 1 and 2, indicated the importance of managing exchange rate risk.
 - Supply Chain
 - Covering issues of delays, raw material shortages, and dependence on certain suppliers.
 - Emerging in interviews with all informants, it indicates the significant impact of the supply chain on cost stability.

Relationship with Informant:

- Informant 1: Emphasizes the role of debt and dollar fluctuations as sources of cost pressures.

- Informant 2 (Finance Director): Focus on the impact of exchange rate changes and dependence on global supply chains.
- Informant 3: Voiced concerns about supply chain efficiency and its impact on total costs.

General Conclusion

Based on two visuals (word cloud and NVivo visual coding), it can be concluded that:

1. Key Issues: There are significant concerns about rising costs, stemming from external pressures such as exchange rate fluctuations and supply chain disruptions, as well as internal pressures such as corporate debt.
2. Strategy & Anticipation:
 - Companies need to improve the efficiency of supply chain management.
 - Risk management against exchange rate changes is a priority.
 - Control over debt structure must be considered to maintain cost stability.
3. Informant Focus: All informants provided complementary perspectives, emphasizing that production cost challenges do not come from a single source, but rather a combination of internal and external factors.

Maintaining Efficiency



Figure 13. Visualization *Text Search* “Maintaining Efficiency”

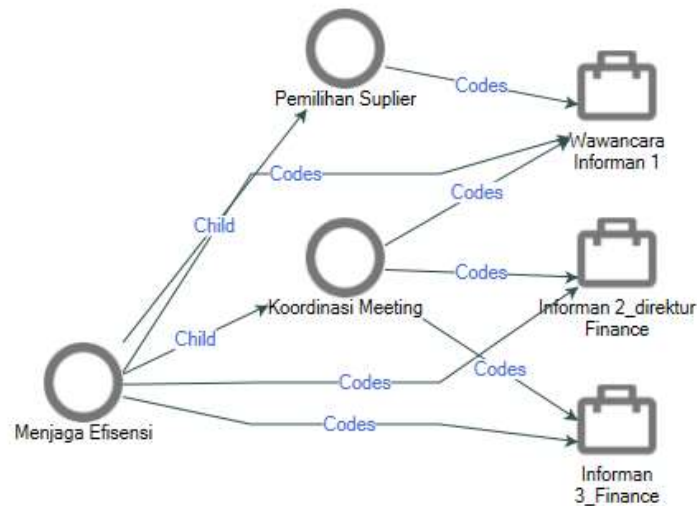


Figure 14. Maintaining Efficiency

Word Cloud Analysis

Word clouds depict the most frequently occurring words in qualitative interviews or documents. The larger the word size, the more frequently the word appears, indicating its importance in the context of the discussion.

Dominant Key Words:

1. Department – Emerged as the most dominant word, indicating that the main issues in the interviews were related to coordination and cooperation between departments within the company.
2. Coordination – Another big word that indicates the importance of communication and synergy between departments to achieve operational efficiency.
3. Meetings – Describes routine activities conducted to discuss problems, resolve conflicts, and enhance collaboration.
4. Inter – Indicates that the issues discussed are always related to interactions or relationships between departments.
5. Working – Shows the core activities that each department must perform in order to work harmoniously.
6. All – Indicates that all elements (departments) must be actively involved in the coordination process.
7. Becoming – Shows the transformation or change expected from this coordination process.
8. Company – Indicates that the strategies or constraints discussed are always linked to the overall internal conditions of the company.

NVivo Visualization Analysis (Node Hierarchy and Coding)

The second figure shows the thematic structure resulting from the mapping using NVivo, focusing on efforts to maintain efficiency through interdepartmental coordination. This theme is broken down into three main subthemes obtained from interviews with three informants.

Thematic Structure:

- Key Theme: Maintaining Efficiency
This is a core topic, which draws attention to the importance of coordination and synergy between departments to improve operational efficiency.

Subtema/Subnode (Child):

1. Supplier Selection
 - Referring to the importance of selecting the right supplier to

- support cost and operational efficiency.
 - It is mentioned in the context of how selecting the wrong supplier can lead to logistical problems, delays and increased costs.
 - 2. Meeting Coordination
 - Represents a regular meeting activity used to discuss challenges, solve problems, and ensure a smooth flow of information between departments.
 - Included in the discussion with Informants 1 and 2, indicated the importance of meetings in maintaining effective communication.
 - 3. Maintaining Efficiency
 - Includes specific steps taken to ensure that each department is working optimally and in sync.
 - Appearing in all informant interviews, it indicates that maintaining efficiency is a top priority for the company.
- Relationship with Informant:
- Informant 1: Emphasized the importance of selecting the right supplier and coordinating meetings to ensure good information flow.
 - Informant 2 (Finance Director): Focus on the influence of supplier selection on operational costs and the importance of meetings to coordinate financial decisions.
 - Informant 3: Voiced concerns about internal efficiency and its impact on overall company productivity.

✦ General Conclusion

Based on two visuals (word cloud and NVivo visual coding), it can be concluded that:

1. Strategy & Anticipation:
 - Companies need to increase efficiency through better

coordination between departments.

- Risk management in supplier selection must be considered to maintain cost stability and logistics flow.
 - Control over the frequency and relevance of meetings is a priority to ensure effective communication.
2. Informant Focus: All informants provided complementary perspectives, emphasizing that efficiency challenges do not come from a single source, but rather a combination of internal (communication, coordination) and external (supplier selection) factors.

CONCLUSION

This study shows that Nvivo is able to identify problems and solutions from respondents. The Nvivo method is also able to provide an overview of the effectiveness through visualization, making it more interesting as a presentation material, and facilitating explanation. Nvivo also helps companies adjust strategies to market conditions and available resources, so that they can increase the competitiveness and added value of steel products in the global market.

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