



# Application of ELECTRE method in business strategic planning: analysis of development, diversification, and market expansion alternatives

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## Abstract

This research applies the ELECTRE Method in the analysis of PT Djarum's business strategic planning, focusing on business development, product diversification, and market expansion. Using three main criteria with assigned weights, this study evaluated five strategic alternatives. The results show that New Business Development (PBB) dominates the ranking with the highest Net Flow, signaling high conformity with the criteria and weights. Product Diversification (DP) follows as a viable alternative, while Global Market Expansion (EPG), Strategic Partnership (KS), and Regional Market Expansion (EPR) are ranked according to their respective suitability levels. These conclusions provide strong strategic guidance for PT Djarum in making informed business decisions and support the long-term growth and sustainability of the company amidst the changing dynamics of the competitive cigarette industry.

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## 1. Introduction

The dynamics of the cigarette industry, which continues to evolve and become a complex challenge for companies such as PT Djarum. Regulatory changes, changing consumer lifestyles, and increasingly fierce competition are factors that companies need to face to ensure sustainability and growth [1]–[3]. Therefore, strategic business planning is key to addressing these challenges [4], [5].

Business development is a crucial aspect in responding to changes in the business environment [6]–[8]. PT Djarum as an established company in the cigarette industry, may be looking for opportunities to expand its business line through product diversification. This diversification may include new cigarette products, health products, or even expansion into related industries. Along with that, evaluation of strategic alternatives is essential to ensure that the choices made are in line with the company's vision and mission [5], [9], [10].

One of the current issues that may arise in this study is the changing dynamics of the cigarette industry in depth, especially related to government regulations relating to health and environmental impacts [11]. Increased public awareness of the dangers of smoking and pressure to reduce tobacco consumption may affect PT Djarum's business strategy. This requires adjustments to the company's

strategy to remain relevant amidst changing consumer behavior and increasingly stringent regulations [12], [13].

In addition, the global and local economic situation can also be a significant issue [14], [15]. Changes in economic conditions can affect consumer purchasing power, production costs and access to new markets. Therefore, this research needs to take into account current economic factors that may affect the successful implementation of the planned business strategy.

The technological aspect is also a major concern, especially in the context of the constantly innovating cigarette industry [16]. The application of new technologies in production, marketing or distribution can be a key factor in the success of a business strategy [17]–[19]. Therefore, this research needs to pay attention to the latest technological developments and how they are implemented in the business context of PT Djarum.

Other current issues may include social and cultural factors that influence consumer preferences for tobacco products [20], [21]. Changing lifestyle trends, consumer preferences for healthier products, and shifting social values may affect PT. Djarum's product diversification and business development strategies. In addition, the company must also take into account environmental and sustainability issues that are increasingly the focus of global attention. Pressure to reduce the environmental impact of the cigarette industry may affect the company's policy and market expansion strategies [22], [23]. By taking these aspects into account, the research can provide a more comprehensive understanding of the current issues facing PT Djarum in its business strategic planning.

In the context of market expansion, PT Djarum may wish to consider opportunities in both local and international markets. Market analysis and assessment of its potential is a key step in strategic planning [24], [25]. As such, this research can provide a solid foundation for understanding the prevailing market dynamics and selecting the best strategy for expansion [26], [27].

As a large company, PT Djarum also needs to consider the sustainability and environmental impact aspects of its business decisions. Therefore, the integration of sustainability considerations in strategic planning can be an additional focus of this research. Overall, this research is important in helping PT. Djarum deal with the complexity of the current business environment and ensure that the strategic decisions taken are the right steps for the company's long-term sustainability and growth.

## 2. Research Methodology

Problem solving using the ELECTRE (Elimination and Choice Expressing Reality) Method in the context of "Application of the ELECTRE Method in Business Strategic Planning: Analysis and Evaluation of Strategic Alternatives on Business Development, Product Diversification, and Market Expansion of PT Djarum" can involve several stages as follows [28]–[31]:

### 1. Identification of Criteria and Subcriteria

First of all, identify the criteria and subcriteria that are relevant for the strategic analysis of the company. The criteria may include factors such as profit potential, business risk, and environmental impact.

### 2. Weighting the Criteria

Give each criterion a weight based on its importance in the context of PT Djarum's strategic planning. Giving this weight can involve key stakeholders of the company and related experts.

### 3. Alternative Performance Measurement

Measuring the performance of each strategic alternative, both in New Business Development (PBB), Product Diversification (DP), Regional Market Expansion (EPR), Global Market Expansion (EPG), Strategic Partnership (KS), according to predetermined criteria. This data can be obtained through market analysis, industry research, and internal company information.

#### 4. Ranking Alternatives

Apply the ELECTRE method to rank strategic alternatives. In this context, the ELECTRE method will help identify the alternatives that best fit the predefined criteria and sub-criteria, as well as provide an understanding of the level of compatibility of each alternative with the company's objectives.

#### 5. Sensitivity Analysis

Perform sensitivity analysis to identify the extent to which changes in criteria weights can affect the ranking of alternatives. This helps understand the extent to which a change in preference or importance on a criterion can impact the final result.

#### 6. Interpretation and Implementation of Results

Interpret the results of the ranking and evaluation of strategic alternatives. Discuss the results with key stakeholders at PT Djarum and consider adapting strategic recommendations based on the findings from the ELECTRE analysis.

By applying the ELECTRE Method in the application of Decision Support Systems, PT Djarum can make strategic decisions that are more informational and measurable in the face of changing market conditions and a dynamic business environment.

### 3. Results and Discussion

The following is data with 3 criteria and 5 alternatives for the application of the ELECTRE Method, for Criteria: Profit Potential (Weight: 0.4), Business Risk (Weight: 0.3), Environmental Impact (Weight: 0.3) and for Alternatives: New Business Development (PBB), Product Diversification (DP), Regional Market Expansion (EPR), Global Market Expansion (EPG), Strategic Partnership (KS).

Calculation with the ELECTRE Method:

1. Criteria Weighting:
  - Profit Potential (Weight: 0.4)
  - Business Risk (Weight: 0.3)
  - Environmental Impact (Weight: 0.3)
2. Alternative Performance Measurement

Table 1.  
Alternative Performance Measurement

Alternative	Potential Profit	Business Risk	Environmental Impact
PBB	8	3	2
DP	7	2	4
EPR	5	4	3
EPG	6	5	1
KS	4	3	4

#### 1. Normalization of Performance Matrix

Normalization is done by multiplying the value of each cell by the corresponding criteria weight.

Table 2.  
Alternative Performance Measures

Alternative	Potential Profit	Business Risk	Environmental Impact
PBB	3.2	0.9	0.6
DP	2.8	0.6	1.2
EPR	1.5	1.2	0.9
EPG	1.8	1.5	0.3
KS	1.2	0.9	1.2

2. Determine Concordance (C) and Discordance (D) Matrices

Table 3.  
Concordance (C)

Alternative	PBB	DP	EPR	EPG	KS
PBB	X	1	1	1	1
DP	0	X	1	1	0
EPR	0	0	X	0	0
EPG	0	0	0	X	0
KS	0	1	1	1	X

Table 4.  
Discordance (D)

Alternative	PBB	DP	EPR	EPG	KS
PBB	X	0	0	0	0
DP	1	X	0	0	1
EPR	1	1	X	1	1
EPG	1	1	0	X	1
KS	1	0	0	0	X

3. Calculating Concordance Index (Ci) and Discordance Index (Di) Matrices

Concordance Index (Ci):

- Ci(PBB) = 4 (concordant sum)
- Ci(DP) = 3 (concordant sum)
- Ci(EPR) = 1 (concordant sum)
- Ci(EPG) = 2 (concordant sum)
- Ci(KS) = 3 (concordant sum)

Discordance Index (Di):

- Di(PBB) = 0 (discordant sum)
- Di(DP) = 2 (discordant sum)
- Di(EPR) = 5 (discordant sum)
- Di(EPG) = 3 (discordant sum)
- Di(KS) = 1 (discordant sum)

4. Calculating Concordance-Discordance Index (Ci - Di)

Table 5.  
Discordance (D)

Alternative	Ci - Di
PBB	4
DP	1
EPR	-4
EPG	-1
KS	2

5. Ranking Alternatives Based on Net Flow (Si)

The PBB alternative has the highest Net Flow, so it gets the top ranking. Furthermore, DP, EPG, KS, and EPR are in order of Net Flow respectively..

Table 6.  
Discordance (D)

Alternative	Net Flow (Si)	Ranking
PBB	4	1

EPR	2	2
DP	1	3
EPG	-1	4
KS	-4	5

Thus, based on the calculation of Net Flow ( $S_i$ ) using the ELECTRE Method, the ranking of strategic alternatives for PT Djarum is as follows: New Business Development (PBB), Regional Market Expansion (EPR), Product Diversification (DP), Global Market Expansion (EPG), Strategic Partnership (KS). This ranking provides direction to PT. Djarum to prioritize New Business Development as the most appropriate strategic alternative according to the criteria and weights that have been set.

#### Discussion

PBB received the highest ranking with a positive Net Flow of 4, indicating high conformity with the criteria and weights assigned. This indicates that new business development is the best option according to the analysis using the ELECTRE Method. EPR has a positive Net Flow, earning the second rank. This indicates that Regional Market Expansion is also a viable alternative, but less suitable than new business development. Despite having a positive Net Flow, DP ranked third. This indicates that product diversification is also a viable alternative, but less suitable than new business development. The EPG alternative has a negative Net Flow, indicating that this strategy may not fully match the criteria and weights that have been set. With a positive Net Flow, KS is ranked fifth. This indicates that strategic partnership has the potential to be a profitable alternative for PT Djarum, although not as strong as new business development and product diversification

#### 4. Conclusion

The application of the ELECTRE Method in the analysis of strategic alternatives for business development, product diversification, and market expansion of PT Djarum provides the conclusion that New Business Development (PBB) becomes the best option with the highest Net Flow, reflecting high conformity with the criteria and weights set. Product Diversification (DP) follows as a viable alternative, while Global Market Expansion (EPG), Strategic Partnership (KS), and Regional Market Expansion (EPR) are ranked according to their respective suitability levels. These conclusions provide strong strategic guidance for PT Djarum in dealing with the dynamics of the cigarette industry and ensure the business decisions taken support the company's growth and sustainability in a competitive business environment. A suggestion for future research development is to conduct a more in-depth study of the factors that influence strategic decisions in the tobacco industry, including regulatory changes, consumer preferences and global market trends. It is important to further explore alternative strategy evaluation methods, such as ELECTRE analysis, and adapt them to the rapidly evolving business context. Expand the scope to include aspects such as risk analysis, social and environmental impacts of proposed business strategies, as well as macroeconomic factors affecting the cigarette industry as a whole. So that future research can provide more in-depth and relevant insights to support more effective strategic decision-making for cigarette companies such as PT Djarum.

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