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Analysis of the Selection of General Contract Conditions for Toll Projects in South Sumatra Province

Mochamad Waskito Adi*, I Putu Artama Wiguna
Institut Teknologi Sepuluh Nopember, Indonesia
Email: mwaskitoa@yahoo.com*

Abstract:
Toll road projects utilizing turnkey contract schemes, initially slated for completion between 2016 and 2019, experienced significant delays due to land unavailability and funding constraints. By 2019, construction progress on the Kayu Agung–Palembang–Betung (KAPALBETUNG) project had reached only 51%. To achieve functional targets, the project owner implemented a strategic policy to complete work up to Station 41+000 and construct a temporary toll exit, requiring an additional budget of approximately IDR 50 billion. The subsequent phase continued from late 2021 to 2023 under a single contract with the first phase but faced further complications from additional land acquisition, cost escalation, and schedule deviations. These conditions heightened the risk of construction disputes. This research aims to identify and formulate criteria and sub-criteria for dispute resolution using the Modified Delphi method and to determine the optimal contract alternative through the Preference Ranking Organization Method for Enrichment Evaluations (PROMETHEE). Data were collected via literature review and in-depth interviews and validated through five rounds of Modified Delphi. Results indicate the priority weights of criteria as Schedule (35.00%), Cost (32.22%), and Quality (32.78%). PROMETHEE analysis reveals that the NEC4 Engineering and Construction Contract (ECC) is the most optimal alternative for mitigating potential disputes. This study contributes to strategic decision-making in managing dispute risks within complex, dynamic construction projects.

Keywords: FIDIC (EPC/Turnkey Projects), The NEC4 Engineering and Construction Contract (ECC), Dispute / Conflict, Modified Delphi.

Corresponding: Mochamad Waskito Adi
E-mail: mwaskitoa@yahoo.com

INTRODUCTION

In recent years, the condition of transportation infrastructure on the island of Sumatra shows an imbalance between the need for mobility and the availability of road infrastructure (INDONESIA, 2017; Salim & Negara, 2018; Wahyuni et al., 2022). Every time before the holiday, damage to the Sumatra highway often becomes the attention of the public and the media. On the other hand, economic growth in this region demands roads with more adequate capacity and quality. The economic crisis in 1997 caused the government to be unable to finance the construction of toll roads independently, so the private sector began to be involved in infrastructure development schemes. However, the absence of a toll road network master plan has led to many development proposals being not integrated with the national road network system and regional spatial planning.

One of the toll road construction initiatives in Sumatra is the Kayu Agung – Palembang – Betung (KAPALBETUNG) project proposed by PT Sriwijaya Markmore Persada. The project uses a turnkey contract scheme and was signed in 2016 with a target completion of 2019. However, the project encountered significant obstacles due to land acquisition and funding limitations, so that only 51% of progress was achieved. Phase 2 will continue in 2021–2023, but design optimization and cost increases trigger potential disputes / disputes between

service users and service providers, especially related to price escalation and technical design changes (Data Umum Proyek, 2025).

If not addressed early, this issue may escalate into legal disputes that negatively impact construction performance (Undang-undang Nomor 2 Tahun 2017, 2017). Therefore, an appropriate dispute resolution approach is necessary. Previous research by Mariyati (2018) discussed legal principles in the preparation and implementation of Engineering Procurement Construction (EPC) contracts as a reference for drafting clear clauses to avoid disputes. Sofyana (2024) also analyzed the positive impacts of construction dispute resolution through arbitration, emphasizing the importance of adaptive and procedural contractual frameworks. Research by Eggleston (2019) highlighted the advantages of the NEC4 Engineering and Construction Contract (ECC) in risk management and collaboration among parties, while Hardjomuljadi (2010) explained the framework of the FIDIC Silver Book, which is often used in turnkey projects but contains clauses that may be less flexible to changes.

This problem, if not addressed early, can develop into a legal dispute that has an impact on declining the performance of construction implementation (Undang-undang Nomor 2 Tahun 2017, 2017). Therefore, an appropriate dispute resolution approach is needed. This study aims to analyze the potential disputes / contract disputes of the KAPALBETUNG toll road project by comparing two dispute resolution frameworks: FIDIC (EPC/Turnkey Projects) (Hardjomuljadi, 2010) and NEC4 Engineering and Construction Contract (ECC) (Eggleston, 2019), in the context of construction regulations in Indonesia. The benefit of this research is to provide contract recommendations based on multicriteria analysis to minimize potential disputes in large-scale infrastructure projects, while serving as a reference for stakeholders in drafting more adaptive, transparent, and collaboratively oriented contractual clauses.

RESEARCH METHOD

The research method is a structured process that follows systematic rules and steps so that it can be understood and followed by other parties. The object of the research is the Musi Bridge Construction Project in Palembang with the contractor PT. Waskita Karya and contract value of around IDR 755 billion (Data Umum Proyek, 2025). The research data is divided into two (Dika, 2020): secondary data in the form of contract documents related to the settlement of claims, disputes, and arbitration; as well as primary data from interviews with experts in the field of claims and construction dispute resolution. This approach allows for an in-depth analysis of dispute resolution mechanisms in large infrastructure projects.

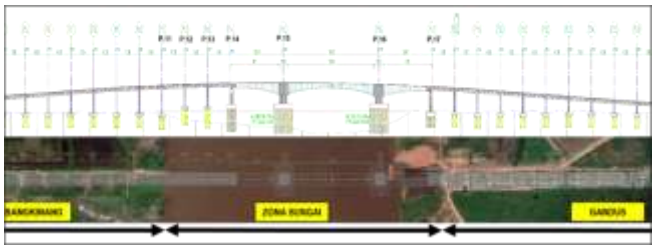

Figure 1. Cross section of the Musi Bridge
Source: Project General Data [1]

Data collection in this study used literature studies and in-depth interviews (Dika, 2020). Literature studies examine contract documents such as Project Contracts, FIDIC

(EPC/Turnkey Projects), and Nec4 relevant to the settlement of claims, disputes, and arbitration on the aspects of cost, quality, and schedule (Sofyana, 2024). In-depth interviews were conducted with experts from project owners, contractors, and supervisory consultants who were selected by purposive based on a minimum of five years of experience (Dika, 2020). The research population includes key teams from the three agencies (Dika, 2020). Data analysis using the Modified Delphi method to establish dispute resolution criteria and subcriteria in construction projects (Risalah Konsensus, 2025).

The determination of criteria and subcriteria was carried out through literature studies and in-depth interviews and analyzed using Modified Delphi. This method breaks down criteria into more specific, such as technical knowledge and skills, and refers to literature references to support experts' decisions. Discussions in in-depth interviews generate feedback to reach a mutual agreement. Process Modified Delphi is carried out in five rounds: identification of important criteria, weighting of criteria, identification of subcriteria, weighting of subcriteria, and evaluation of subcriteria of project alternatives to obtain the right decision.

The final decision in this study was calculated using the Promethee method (Istiqomah et al., 2018), based on data obtained and evaluated through the Modified Delphi. The process includes determining the type of preference and criterion parameters by calculating the difference value (d) and the value preference (H(d)), then calculate the index preferences (Q). Next, a dominance relationship is arranged in the form of positive and negative outranking flow. The Promethee Index is calculated to rank decisions, which are carried out in two stages: Promethee I for partial ranking and Promethee II for complete ranking as the basis for selecting the best alternatives.

This research method combines literature studies and in-depth interviews to obtain criteria and subcriteria in the analysis of toll road project contract disputes. The collected data was evaluated for consistency using the Modified Delphi approach. Furthermore, the Promethee method was applied to determine alternative rankings in choosing the best solution, with a focus on comparison between FIDIC (EPC/Turnkey Projects) and NEC4 (ECC) in South Sumatra Province.

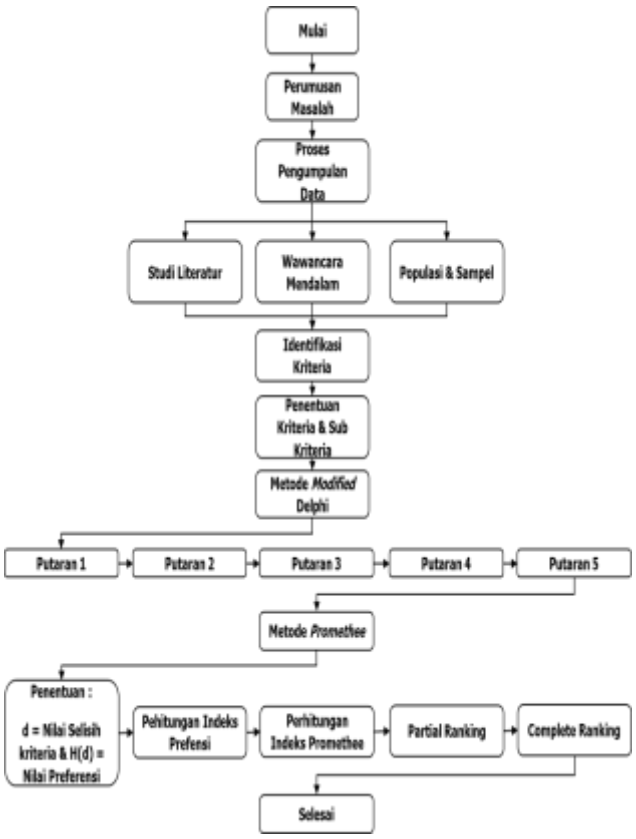

Figure 2. Research Process Diagram
Source: Adapted from Author's Analysis [16]

RESULTS AND DISCUSSION

Data Collection

This research method combines literature study and in-depth interviews to obtain criteria and subcriteria in the analysis of toll road project contract disputes (Istiqomah et al., 2018). Evaluation of data consistency is carried out through the Modified Delphi dan Promethee. Modified Delphi is used to obtain expert consensus through multiple rounds of anonymous questionnaires, allowing for adjustments to views based on group feedback. Furthermore, the Promethee method is applied to rank the project's alternatives based on the agreed criteria, taking into account the flow of positive and negative dominance between the alternatives. This process aims to produce objective and structured decisions in the settlement of toll road project contract disputes in South Sumatra Province.

Method Modified Delphi

Primary data is collected through Modified Delphi, which involved a panel of experts, used consecutive questionnaires based on the results of literature studies and in-depth interviews (Istiqomah et al., 2018). Respondents were selected purposively and given information on the purpose of the research before filling out a questionnaire regarding criteria and subcriteria as well as the weight of their importance. This structured process aims to build consensus in determining evaluation elements. Contract literature such as Contract of Wholesale Services article 22 (Kontrak Proyek, 2016), FIDIC (EPC/Turnkey Projects) SubKlausula 20 (Hardjomuljadi, 2010) and NEC4 ECC part Avoid and Resolve Disputes

(Eggleston, 2019) to be the main reference for the identification of the riskiest aspects related to project cost, quality, and schedule.

Modified Delphi Steps

Round 1: Researchers integrate key criteria Schedule, Cost, and Quality Results of literature studies and in-depth interviews (Risalah Konsensus, 2025) into the process Modified Delphi for consistency evaluation. Expert respondents gave a rating using a five-point Likert scale (Strongly Agree to Strongly Disagree). The data was grouped based on the similarity of the answers and processed in a statistics descriptive to obtain the weight of each criterion. This step ensures the selection of credible evaluation elements and consensus among experts, as the basis for the application of the Promethee method to determine the best alternatives in the contract dispute analysis of toll projects using contracts FIDIC (EPC/Turnkey Projects) and NEC4 ECC The results of data processing in round 1 can be seen in Table 1. and Table 2.

Table 1. Results of the Selection of Criteria

No	Criteria	Respond								
		1	2	3	4	5	6	7	8	9
1	Schedule	SS	SS	S	SS	TS	S	N	S	SS
2	Cost	S	S	SS	S	N	S	SS	S	S
3	Quality	SS	S	SS	S	SS	S	SS	S	S

Source: Results of Modified Delphi Round 1 Processing (2025)

Table 2. Results of Questionnaire Selection Criteria

No	Criteria	Respond					Total	And	Score
		SS	S	N	TS	STS			
1	Schedule	4	3	1	1	0	37	45	82.22 %
2	Cost	2	6	1	0	0	37	45	82.22 %
3	Quality	4	5	0	0	0	40	45	88.89 %

Source: Results of Modified Delphi Round 1 Processing (2025)

Round 2 : From round 1 continued to analyze the results of the criteria weighting questionnaire, the average weight was obtained: Schedule (35,00 %), Cost (32.22%), and Quality (32,78 %). Relationship trade-off Between these three aspects, it often appears, for example, speeding up schedules can increase costs or decrease quality. In the Kapalbetung Toll Road project (Kayu Agung–Palembang–Betung Section 2), the delay in land acquisition caused progress of only 51%. The temporary toll exit policy worth ± Rp. 50 billion and the design optimization phase 2 (2021–2023) lead to potential disputes / disputes if there is no design and price agreement. Changes such as the reduction of two sponges Box BalanceReplacement PCI Girder, and the addition of foundations makes quality and time assurance a critical issue (Data Umum Proyek, 2025).

Table 3. Results of the Criteria Weighting Questionnaire

No	Kritria	Respond									Mean
		1	2	3	4	5	6	7	8	9	
1	Schedule	35	34	37	36	35	35	34	37	36	35,00

2	Cost	32	34	31	31	34	32	34	31	31	32,22
3	Qualty	33	32	32	33	33	35	32	32	33	32,78

Source: Results of Modified Delphi Round 2 Processing (2025)

Round 3: The results of Round 2 in the form of criteria weight were submitted to all respondents, thezn the researcher submitted a questionnaire containing subcriteria based on literature studies and in-depth interviews (Risalah Konsensus, 2025). Furthermore, data processing from questionnaire answers related to the proposed subcriteria was carried out.

Table 4. Subcriteria Selection Results

No	Subkriteria	Code	Shoes	Conclusion
1	Up to 30 days after temporary handover of work (PHO)	A	75,56%	Agree
2	The validity period can be determined more precisely	B	86,67%	Agree
3	Contractor to submit a detailed initial time program and update it when it does not match progress	C	97,78%	Agree
4	Up to the handover of work (FHO)	D	80,00%	Agree
5	Extension of the Notice of Quality Defects, maximum 2 years	And	84,44%	Agree
6	A more detailed set of documents that make up the program to be submitted on a regular basis as determined by the employer	F	82,22%	Agree
7	Have the program received and always updated, there is a withholding & payment sanction to the contractor if it fails to submit the first program	G	84,44%	Agree
8	If there is a reduction in scope (not transferred), the second party is entitled to overhead and profit compensation of 5%	H	86,67%	Agree
9	If the work is transferred, the second party is entitled to overhead and profit compensation of 5% plus a 3% coordination fee	I	75,56%	Agree
10	Value adjustment only occurs when there is a reduction in scope	J	88,89%	Agree
11	Escalation	K	88,89%	Agree
12	Dispute resolution, Consensus Deliberation, Bani	L	84,44%	Agree
13	Excess of more than 25% price adjustment according to the formula in the clause	M	73,33%	Agree
14	There needs to be a maximum limit on the amount of volume change"	N	84,44%	Agree
15	Variations/claims	Or	57,78%	Neutral
16	Dispute Councils, tripartite agreements, consensus deliberations, International arbitration	P	75,56%	Agree
17	Setting the price to be paid to the contractor based on the quantity bill	Q	86,67%	Agree
18	Further alternatives to lump sum-based open book contracts or fees such as reimbursements, management contracts, or target cost contracts are increasingly common	R	73,33%	Agree

19	Compensation	S	71,11%	Agree
20	Dispute avoidance board, adjudication board, conciliation board, Court	T	75,56%	Agree
21	The Term of Temporary Handover date must be as stipulated in the Contract Agreement	In the	73,33%	Agree
22	Calculated from the date on which the Work or Part of the Work is declared complete	V	66,67%	Agree
23	Allow designs done by employers, designs contracted by contractors, or piece-by-piece	In	73,33%	Agree

Source: Results of Modified Delphi Round 3 Processing (2025)

From Table 4. subcriteria were obtained, with 22 approved and 1 neutral but still included in the final evaluation list [3]. These subcriteria are then coded to make visualization easier, in a hierarchical system"Criteria – Subcriteria – Alternatives". A hierarchy chart comparing deployments FIDIC (EPC/Turnkey Projects) and NEC4 ECC in the context of the KAPALBETUNG Toll Road project, it can be seen in Figure 5. This approach ensures that all aspects including neutral subcriteria are considered in the selection of the best alternatives, while looking at consistency and transparency in the determination of weights and evaluation of the final decision of the research.

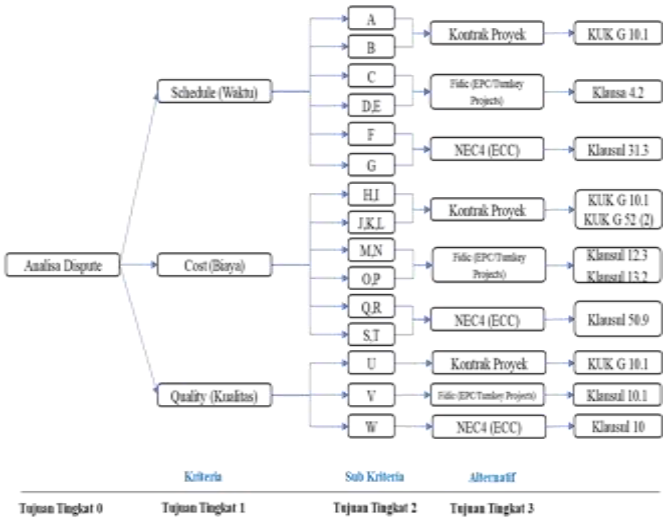

Figure 3. Criterion Hierarchy – Sub Criteria - Alternative

Source: Adapted from Author's Analysis [16]

Round 4: The following is a summary of the questionnaire answers from 9 (nine) respondents to the existing Sub Criteria in round 3 with the results:

Table 5. Subcriteria Weighting Questionnaire Results

No	Code	Mean
1	Up to 30 days after temporary handover of work (PHO)	14%
2	The validity period can be determined more precisely	15%
3	Contractor to submit a detailed initial time program and update it when it does not match progress	14%
4	Up to the handover of work (FHO)	15%
5	Extension of the Notice of Quality Defects, maximum 2 years	14%
6	A more detailed set of documents that make up the program to be submitted on a regular basis as determined by the employer	14%

7	Have the program received and always updated, there is a withholding & payment sanction to the contractor if it fails to submit the first program	14%
8	If there is a reduction in scope (not transferred), the second party is entitled to overhead and profit compensation of 5%	8%
9	If the work is transferred, the second party is entitled to overhead and profit compensation of 5% plus a 3% coordination fee	8%
10	Value adjustment only occurs when there is a reduction in scope	8%
11	Escalation	8%
12	Dispute resolution, Consensus Deliberation, Bani	8%
13	Excess of more than 25% price adjustment according to the formula in the clause	7%
14	There needs to be a maximum limit on the amount of volume change"	8%
15	Variations/claims	8%
16	Dispute Councils, tripartite agreements, consensus deliberations, International arbitration	7%
17	Setting the price to be paid to the contractor based on the quantity bill	6%
18	Further alternatives to lump sum-based open book contracts or fees such as reimbursements, management contracts, or target cost contracts are increasingly common	8%
19	Compensation	8%
20	Dispute avoidance board, adjudication board, conciliation board, Court	8%
21	The Term of Temporary Handover date must be as stipulated in the Contract Agreement	35%
22	Calculated from the date on which the Work or Part of the Work is declared complete	32%
23	Allow designs done by employers, designs contracted by contractors, or piece-by-piece	33%

Source: Results of Modified Delphi Round 4 Processing (2025)

From the data in Table 5. The results of the Subcriteria Weighting Questionnaire were obtained with the results of the average weighting according to the mean column.

Round 5: Criterion Value - Subcriteria above is obtained classification referring to each Criterion - Sub Criterion - Alternative, for Sub Criteria explained by letter code A – W with a description can be seen in Table 5 Subcriterion Selection Results and for alternatives there are 3, namely:

a. A-1 = Alternative 1 (Project Contract) [10]
b. A-2 = Alternative 2 (FIDIC (EPC/Turnkey Projects)) [7]
c. A-3 = Alternative 3 (NEC4 - ECC) [5]

The Promethee Method

The results of Round 5 are followed by the Promethee Method Analysis, the first of which is to group according to the conditions of Alternatives & Criteria to obtain the equation.

Table 6. Results Matrix

Criterion	**Alternative**		
	A- 1 = a1	A- 2 = a2	A- 3 = a1
Schedule	4,06	4,37	4,17
Cost	4,24	3,64	3,83
Quality	3,67	3,33	3,67

Source: Results of Promethee Analysis based on Modified Delphi Final Weights (2025)

From table 6. The above decision matrix obtained the average value of each alternative according to the criteria that had been previously agreed upon in Table 1. Results of the Questionnaire for Selection of Criteria, in accordance with the steps in carrying out the Promethee method [2].

Determination of the preference function.

According to Istiqomah et al. (2018) Preferences function It is intended to look at the decision-makers' preference for Alternative A over Alternative B. Each criterion can have a different preference function, with values ranging from 0 to 1. The smaller the value of the function, the greater the difference (indifference) of both alternatives. The closer it is to 1 function value, the greater the preference.

Table 7. Difference in Value Criteria (d)

Calculating the difference in the value of criterion (d)			
(a,b)	d		
	Schedule	Cost	Quality
(a1,a2)	-0,31	0,61	0,33
(a1,a3)	-0,11	0,41	0,00
(a2,a1)	0,31	-0,61	-0,33
(a2,a3)	0,20	-0,19	-0,33
(a3,a1)	0,11	-0,41	0,00
(a3,a2)	0,11	0,19	0,33

Source: Calculated based on Table 6 data

Table 8. preference between alternatives H(d)

Calculation of preferences between alternatives H(d)			
(a,b)	**H(d)**		
	Schedule	**Cost**	**Quality**
(a1,a2)	0	1	1
(a1,a3)	0	1	0
(a2,a1)	1	0	0
(a2,a3)	1	0	0
(a3,a1)	1	0	0
(a3,a2)	1	1	1
Total	4	3	2

Source: Calculated based on Table 7 data and preference function

From the table of Table 7 Difference in Criteria Values (d) is obtained the calculation of the Analysis between alternatives so that from the Analysis continues in Table 8 preferences between the H(d) alternatives so that the total prevalence of each criterion is obtained, in accordance with the steps in carrying out the Promethee method.

Calculation of Preference Index (Promethee) To obtain the preference index, weight data from each preference between H(d) alternatives is required. The following is the Index of Preferences for the criteria:

Table 9. Preference Index (Q)

Calculating the Preference Index (Q)				
(a,b)	**Schedule**	**Cost**	**Quality**	**Q**
(a1,a2)	0	3	2	5
(a1,a3)	0	3	0	3
(a2,a1)	4	0	0	4
(a2,a3)	4	0	0	4
(a3,a1)	4	0	0	4
(a3,a2)	4	3	2	9

Source: Calculated based on weights from Table 8

Table 10. Multi-Criteria Preference Index

Q =	**-**	**5,00**	**3,00**
	4,00	-	4,00
	4,00	**9,00**	**-**

Source: Compiled from Table 9 data

From Table 9. Preference Index (Q) obtained from the Preference Index (Q) The value indicates the nominal preference based on all criteria. For Index values Preferences (Q) changes are made to the table preparation model that will be used to determine the ranking arrangement, in accordance with the steps in carrying out the Promethee method (Istiqomah et al., 2018).. Promethee I Round : partial alternate rankings

Table 11. Promethee I

Calculating the Promethee Index		
Alternative	**Leaving Flow (ϕ+)**	**Entering Flow (ϕ-)**
A-1	4,00	4,00
A-2	4,00	7,00
A-3	6,50	3,50

Source: Calculated based on Table 10 data

An alternative is said to have the highest ranking (order) if the leaving value: "The flow is larger than the other alternatives and the Entering Flow value is smaller than the other alternatives".

From Table 11 Promethee I obtained Leaving Flow A3 = 6.50 is the value Leaving Flow highest, and Entering Flow = 3.50 is the value Entering Flow lowest, so that A-3 has the highest ranking, according to the steps in doing the Promethee method) (Istiqomah et al., 2018). Promethee II: Complete alternative rankings

Table 12. Promethee II

Calculating the Promethee Index				
Alternative	L F(φ+)	E F (φ-)	N F (φ)	Rank
A-1	4,00	4,00	0,00	2
A-2	4,00	7,00	-3,00	3
A-3	6,50	3,50	3,00	1

Source: Calculated based on Table 11 data

From Table 12. Promethee II obtained Leaving Flow A3 = 6.50 is the value Leaving Flow highest, and Entering Flow = 3.50 is the value Entering Flow at the lowest, Net Flow = 3.00 is the value Net Flow Highest Rank, Rank = Complete The ranking in Alternative A-3 analysis is in accordance with the steps in carrying out the Promethee method (Istiqomah et al., 2018).

Summary of improvements refers to the results of the Promethee I & II Analysis

Schedule, Kapal Betung Toll Contract (Kontrak Proyek, 2016) Stipulate a working period of 34 months with an option to extend if the land is not yet free, as well as provisions for the handover of work based on contract clauses. Meanwhile, NEC4 ECC (Eggleston, 2019) Time is set in detail through initial program clauses, regular updates, and compensation events that affect schedules and costs. The work program must be approved by the Project Manager, and late completion may result in fines. NEC4 emphasizing transparency, risk management, efficiency, and time-related dispute resolution, thus supporting projects that are more organized, adaptive, and collaborative than traditional contracts.

Cost in Toll Contracts (Kontrak Proyek, 2016), contract pricing using the Fixed Unit Price based on the volume of the final image and the actual execution. Instead NEC4 ECC (Eggleston, 2019) adopt a more comprehensive cost approach, with defined cost definitions (defined cost) includes labor, materials, equipment, and openly auditable subcontracts on multiple options. Disallowed fees (disallowed cost) excluded to avoid invalid claims. NEC4 It provides six payment options that govern the sharing of risk between contractors and clients, ranging from a fixed price to a cost target model with profit and loss sharing. Simplifying the calculation of costs and defining client costs in alliance contracts also improves the transparency and effectiveness of project cost management.

Quality in Toll Contracts (Kontrak Proyek, 2016), the quality of work is regulated through Article 14 which gives the project owner the right to assess the work results and order the contractor to improve if the results have not met the terms of the contract. Meanwhile, NEC4 ECC (Eggleston, 2019) systematically integrate quality management in Clause 4, which requires contractors to develop quality policy statements, quality plans, and implement effective quality management systems. The process of testing, inspection, and fixing non-conformities is also regulated in detail. This approach improves quality problem prevention, project efficiency, and collaboration between contractors and project managers, while providing clear quality dispute resolution procedures.

The determination of the criteria and subcriteria for the selection of alternative contracts is based on the consensus minutes (Risalah Konsensus, 2025), covering three main criteria: Schedule, Cost, and Quality (Sofyana, 2024), with each of the sub-criteria adjusted according to the characteristics of the Project Contract, FIDIC (EPC/Turnkey Projects) and NEC4 ECC. Data collection using the Modified Delphi method was carried out in five rounds, resulting in the weighting of the criteria with the highest value in Quality (88.89%), and weighting of the average criteria Schedule (35,00), Cost (32,22), and Quality (32,78). Significant changes in contracts, such as design optimization and implementation delays, trigger cost escalation. Data analysis is followed by the Promethee method to determine the preferences and ranking of alternative contracts. Promethee II results show an alternative NEC4 ECC (A-3) has the highest

rating based on grades Net Flow 3.00, indicates the best option to minimize disputes and optimize project management.

CONCLUSION

This study identified three primary criteria for analyzing construction project dispute resolution—Schedule (35%), Cost (32.22%), and Quality (32.78%)—relevant to the Kayu Agung – Palembang – Betung Toll Road Project Section 2 Package III.2. Using the Promethee method, the analysis revealed that the NEC4 Engineering and Construction Contract (ECC) emerged as the optimal alternative for dispute management, achieving the highest Net Flow value due to its clear procedures for addressing issues related to project time, cost, and quality. It is recommended to enhance legal team involvement in drafting construction contract documents to ensure clause clarity, legal enforceability, and prevention of future disputes. For future research, comparative studies could explore the real-world implementation of NEC4 ECC versus FIDIC frameworks in other Indonesian toll road projects, incorporating longitudinal data on dispute outcomes and stakeholder satisfaction to validate these findings in diverse regional contexts.

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