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The Implementation Of Fidic Standards And The Effectiveness Of Arbitration In Resolving Engineering, Procurement, And Construction (EPC) Contract Disputes In Indonesia: An Analysis Of The Dispute Between The Consortium Of PT Waskita Karya (Persero) Tbk-PT Jakarta Prima Cranes And PT Suprabari Mapanindo Mineral

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Abstract: This study aims to analyze the provisions of the FIDIC Standard in Engineering, Procurement and Construction (EPC) integrated construction contracts in the dispute between the Consortium of PT Waskita Karya (Persero) Tbk–PT Jakarta Prima Cranes and PT Suprabari Mapanindo Mineral, as well as to examine the effectiveness of arbitration as a dispute resolution mechanism for FIDIC-based construction disputes in Indonesia. This research employs an empirical legal method using statutory, conceptual, and case approaches. Data were collected through library research and document analysis related to the dispute and were analyzed qualitatively. The findings indicate that the FIDIC Standard in EPC contracts provides comprehensive provisions concerning risk allocation, claims procedures, variations, dispute resolution mechanisms, and the rights and obligations of the parties. However, its implementation in practice still encounters challenges regarding harmonization with national law, as there is no explicit regulation governing the legal status of FIDIC within the Indonesian legal system. The study further reveals that arbitration is a relatively effective dispute resolution mechanism due to its confidentiality, procedural flexibility, expertise of arbitrators, and the final and binding nature of arbitral awards. Nevertheless, its effectiveness is constrained by high costs, the complexity of technical evidence, and potential obstacles in enforcing arbitral awards. Therefore, clearer harmonization between FIDIC standards and Indonesian law is necessary to enhance legal certainty, justice, and the effectiveness of dispute resolution in integrated construction projects in Indonesia.

Keyword: Arbitration, FIDIC, Integrated Construction, Legal Certainty, Construction Dispute.

INTRODUCTION

The construction sector plays a strategic role in national development because it supports the provision of infrastructure, industrial facilities, mining operations, energy projects,

transportation networks, and other public services. Beyond producing physical structures, construction activities create complex legal and economic relationships among project owners, contractors, consultants, subcontractors, suppliers, financial institutions, workers, and government agencies. As construction projects become increasingly sophisticated, conventional construction contracts have gradually evolved into integrated project delivery systems, particularly Engineering, Procurement, and Construction (EPC) contracts. Under the EPC model, contractors assume comprehensive responsibility for engineering design, procurement, construction, testing, commissioning, and project handover.

In Indonesia, construction services are regulated under Law Number 2 of 2017 concerning Construction Services and Government Regulation Number 22 of 2020 concerning the Implementation of Construction Services. These regulations establish the legal framework governing construction activities, contractual relationships, project implementation, dispute resolution, and administrative sanctions. Consequently, construction activities are not merely technical undertakings but also legal relationships that generate civil, administrative, and economic consequences for the parties involved.

The significance of the construction sector is reflected in its contribution to Indonesia's economy. According to Statistics Indonesia (Badan Pusat Statistik [BPS], 2025), the construction sector contributed 10.43% of Indonesia's Gross Domestic Product (GDP) in the fourth quarter of 2024, 9.84% in the first quarter of 2025, and 9.82% in the third quarter of 2025. These figures indicate that construction remains one of the major contributors to national economic growth. However, large-scale construction projects are often accompanied by substantial legal and commercial risks, particularly in projects involving long implementation periods, high capital investment, multiple stakeholders, and sophisticated technical requirements.

The complexity of EPC projects frequently gives rise to contractual disputes. Construction disputes commonly emerge from delays in project completion, delayed payments, design modifications, variation orders, additional work claims, cost overruns, technical specification disagreements, and differing interpretations of contractual provisions. Such disputes can significantly affect project continuity, increase financial losses, delay investment realization, and disrupt broader economic activities. Data reported by the Indonesian National Board of Arbitration (BANI) revealed that construction disputes represented approximately 30.8% of all arbitration cases handled between 2009 and 2013, indicating that construction disputes constitute a recurring phenomenon rather than isolated incidents within the industry.

Given the technical complexity of construction disputes, arbitration has become a preferred dispute resolution mechanism. Law Number 30 of 1999 concerning Arbitration and Alternative Dispute Resolution defines arbitration as a method of resolving civil disputes outside the general court system based on a written arbitration agreement between the parties. Arbitration is often considered more suitable for construction disputes because it offers confidentiality, procedural flexibility, technical expertise through specialized arbitrators, and final and binding decisions. Nevertheless, arbitration is not free from challenges. Construction arbitration frequently involves substantial costs, extensive documentary evidence, expert testimony, and potential difficulties in enforcing arbitral awards. Therefore, the effectiveness of arbitration cannot be assessed solely from a normative perspective but must also be examined through its practical implementation.

In international construction practice, the Fédération Internationale des Ingénieurs-Conseils (FIDIC) has developed standardized contract forms that are widely adopted in infrastructure, industrial, energy, and EPC projects. FIDIC contracts provide comprehensive provisions governing risk allocation, payment mechanisms, variation procedures, claims management, dispute resolution, and contractual responsibilities. The 2017 edition of FIDIC introduced the Dispute Avoidance/Adjudication Board (DAAB) as an intermediary mechanism

designed to prevent disputes from escalating into arbitration. While FIDIC has gained widespread acceptance internationally, its application within the Indonesian legal system raises important legal questions.

The primary legal issue concerns the status and implementation of FIDIC as an international standard contract within Indonesia's national legal framework. Although Indonesia has enacted comprehensive legislation governing construction services and arbitration, existing laws do not explicitly regulate the legal position of FIDIC. Consequently, uncertainty arises regarding the legal basis of FIDIC, the scope of its application, the authority of arbitral tribunals to interpret FIDIC provisions, and the relationship between FIDIC clauses and mandatory provisions of Indonesian law. Additional uncertainty emerges from the absence of specific regulations governing the legal status of DAAB decisions and their interaction with arbitration proceedings under Indonesian arbitration law.

This normative ambiguity creates potential inconsistencies in contractual interpretation and arbitral decision-making. Arbitrators may rely on international FIDIC principles in one case while prioritizing domestic legal principles in another, potentially leading to divergent outcomes in disputes involving similar contractual clauses. Furthermore, several FIDIC provisions concerning risk allocation, variation orders, claims management, and dispute resolution may require harmonization with Indonesian construction and contract law. These circumstances raise concerns regarding legal certainty, consistency of arbitral awards, and the effectiveness of dispute resolution mechanisms in EPC projects.

The dispute between the Consortium of PT Waskita Karya (Persero) Tbk and PT Jakarta Prima Cranes against PT Suprabari Mapanindo Mineral provides a valuable case study for examining these issues. The dispute arose from the development of coal processing and loading infrastructure in Muara Teweh, Central Kalimantan, involving highly complex engineering, procurement, and construction activities. The project encompassed coal handling facilities, conveyor systems, crushing plants, and other integrated mining infrastructure. Such characteristics make the dispute particularly suitable for analyzing the interaction between EPC contracts, FIDIC provisions, construction arbitration, and Indonesian law.

Previous studies have examined construction arbitration and dispute resolution from various perspectives. Muskibah and Naili (2018) found that arbitration agreements possess binding force but that enforcement of arbitral awards continues to face legal certainty challenges. Fransiska et al. (2022) highlighted the advantages of arbitration in terms of efficiency, confidentiality, and specialized expertise while acknowledging concerns related to cost and procedural complexity. Ilma (2023) concluded that FIDIC-based dispute resolution mechanisms require adaptation to Indonesia's legal environment to function effectively. However, existing studies have largely focused either on arbitration generally or on FIDIC from a normative perspective. Limited research has examined the practical implementation of FIDIC in EPC disputes through an empirical case study involving arbitration proceedings in Indonesia.

Accordingly, this study aims to analyze the implementation of FIDIC standards and the effectiveness of arbitration in resolving EPC contract disputes in Indonesia through an examination of the dispute between the Consortium of PT Waskita Karya (Persero) Tbk–PT Jakarta Prima Cranes and PT Suprabari Mapanindo Mineral. Specifically, the study investigates the legal position of FIDIC within Indonesian contract law and evaluates whether arbitration effectively provides legal certainty, fairness, and finality in resolving complex construction disputes. The findings are expected to contribute to the development of construction law, arbitration practice, and the harmonization of international contract standards with Indonesia's national legal framework.

METHOD

This study used an empirical legal research design with a descriptive-analytical specification. Empirical legal research was selected because the study does not only examine written legal norms, but also analyzes how such norms operate in the practice of integrated construction dispute resolution in Indonesia. Law is therefore viewed not merely as *law in the book*, but also as *law in action*, particularly in contractual relations, EPC project implementation, and arbitration practice.

The descriptive aspect of this study aims to systematically explain the factors causing disputes in integrated construction projects, particularly in coal processing infrastructure development. It also describes how FIDIC standards are used in contractual relations and dispute resolution through arbitration. The analytical aspect is used to assess the relationship between Indonesian national law and the use of FIDIC as an international standard contract. The analysis focuses on whether Law Number 30 of 1999 concerning Arbitration and Alternative Dispute Resolution, Law Number 2 of 2017 concerning Construction Services, Government Regulation Number 22 of 2020, and the Indonesian Civil Code provide adequate legal support for the use of FIDIC in EPC construction arbitration.

This study applies a juridical-empirical approach. This approach is relevant because the research examines the implementation of legal norms in society, especially in the settlement of integrated construction disputes through arbitration. The juridical-empirical approach is supported by three additional approaches. First, the statutory approach is used to examine legal instruments related to arbitration, construction services, contracts, and dispute settlement. Second, the conceptual approach is used to analyze key concepts such as legal effectiveness, legal certainty, justice, arbitration, EPC contracts, construction disputes, and FIDIC standards. Third, the case approach is used to examine the dispute between the Consortium of PT Waskita Karya (Persero) Tbk and PT Jakarta Prima Cranes against PT Suprabari Mapanindo Mineral.

The data used in this study consist of primary and secondary data. Primary data are obtained through interviews or direct information from parties who understand construction law, arbitration, EPC contracts, and FIDIC-based dispute resolution. The informants may include construction law academics, arbitration practitioners, advocates, arbitrators, contract consultants, construction claim consultants, and parties with relevant knowledge of EPC projects. Secondary data consist of primary legal materials, secondary legal materials, and tertiary legal materials. Primary legal materials include Law Number 30 of 1999, Law Number 2 of 2017, Government Regulation Number 22 of 2020, the Indonesian Civil Code, Supreme Court regulations, and relevant legal documents. Secondary legal materials include books, journal articles, research reports, expert opinions, and academic literature on construction law, arbitration, contract law, FIDIC, legal effectiveness, legal certainty, and justice. Tertiary legal materials include legal dictionaries, legal encyclopedias, and other supporting references.

Data collection was conducted through library research, document study, and semi-structured interviews. Library research was used to collect theoretical and conceptual materials on construction law, arbitration, FIDIC, contract law, and legal effectiveness. Document study was conducted by examining laws and regulations, contract documents, publicly available case information, corporate reports, arbitration-related publications, and other official documents relevant to the dispute. Semi-structured interviews were used to obtain practical information regarding the causes of construction disputes, the implementation of FIDIC clauses, the effectiveness of arbitration, and legal uncertainty in EPC dispute resolution. To strengthen data validity, this study applies triangulation by comparing interview data, legal documents, project-related documents, and academic literature.

The data were analyzed qualitatively. The analysis was carried out in four stages. The first stage was data reduction, in which relevant data concerning dispute causes, FIDIC

implementation, arbitration mechanisms, legal uncertainty, legal certainty, and justice were selected and classified. The second stage was data presentation, in which the selected data were organized into thematic narratives. The third stage was empirical legal analysis, which compared legal norms with legal practice. The analyzed norms include arbitration law, construction services law, contract law, and FIDIC contractual principles. The fourth stage was drawing conclusions through inductive and argumentative reasoning. The conclusions were developed from empirical findings and then connected with the theories of legal effectiveness and legal certainty.

The research locations were determined based on their relevance to the object of study, sources of data, and parties involved in the integrated construction dispute. The research locations include the construction project site in Central Kalimantan, the company location at Wisma JPC, Jl. Mampang Prapatan Raya No. 20, Jakarta, and BANI Arbitration Center at Wahana Graha, 1st and 2nd Floor, Jl. Mampang Prapatan No. 2, Jakarta. These locations were selected to obtain data from three important dimensions, namely project implementation, company and contractual administration, and arbitration dispute resolution.

The research was planned to be conducted over five months. The first month was allocated for preparing research instruments, identifying informants, and collecting initial legal materials. The second month was used for document study. The third month was allocated for field data collection and interviews. The fourth month was used for data processing, data reduction, classification, and triangulation. The fifth month was used for final analysis, conclusion drawing, and recommendation formulation. This schedule remains flexible because empirical legal research depends on access to informants, availability of documents, and permission from relevant parties.

RESULTS AND DISCUSSION

Adoption of FIDIC Silver Book 1999 in EPC Contractual Arrangements

a. The Legal Position of FIDIC in Indonesian EPC Construction Contracts

The findings demonstrate that the contractual relationship between the PT Waskita Karya (Persero) Tbk–PT Jakarta Prima Cranes Consortium (hereinafter Waskita-JPC Consortium) and PT Suprabari Mapanindo Mineral (PT SMM) was governed by the *Conditions of Contract for EPC/Turnkey Projects, First Edition 1999* issued by the International Federation of Consulting Engineers (FIDIC), commonly known as the FIDIC Silver Book 1999. The adoption of FIDIC indicates a deliberate decision by the contracting parties to employ an internationally recognized contractual framework to regulate a complex engineering, procurement, and construction (EPC) project within Indonesia.

The results reveal that the EPC model employed in the project embodied the principle of integrated project delivery, whereby a single contractor assumed responsibility for engineering design, procurement activities, and construction execution. Such arrangements are commonly referred to as turnkey contracts because the contractor bears primary responsibility for delivering a fully operational facility upon completion. Consequently, the majority of project risks are transferred from the employer to the contractor.

The adoption of FIDIC Silver Book 1999 provided a comprehensive legal framework governing contractual rights and obligations, risk allocation mechanisms, payment procedures, claims administration, variation orders, termination provisions, and dispute resolution processes. The findings indicate that FIDIC functioned not merely as a technical construction guideline but as a legally operative contractual instrument governing the entire contractual relationship between the parties.

From the perspective of Hans Kelsen's Theory of Legal Certainty, the validity of FIDIC provisions derived from their incorporation into a legally binding contract. Once integrated into the contractual agreement, FIDIC clauses acquired normative force and became binding rules

that determined the legal consequences of the parties' actions throughout project implementation. The certainty created by these provisions was reflected in their ability to define rights, obligations, risks, and contractual remedies in a predictable manner.

The findings further suggest that Indonesian law permits the adoption of international contractual standards as long as such standards do not contradict mandatory provisions of national law and are incorporated through a valid contractual agreement. Accordingly, the legal force of FIDIC in this dispute did not arise from legislative enactment but from the parties' exercise of contractual autonomy under the principle of freedom of contract.

b. Legal Certainty and Contractual Binding Force

The study found that the contractual provisions derived from FIDIC Silver Book 1999 played a central role in shaping the legal arguments presented by both parties throughout the dispute. PT SMM relied on contractual provisions concerning termination rights, particularly Sub-Clause 15.2 of FIDIC Silver Book 1999, while the Waskita-JPC Consortium invoked various contractual provisions governing payment obligations, additional works, and compensation claims.

These findings indicate that the dispute was not caused by an absence of legal regulation. Rather, it emerged from competing interpretations of detailed contractual provisions that had already been agreed upon by the parties. Consequently, FIDIC functioned as the primary normative reference used to evaluate the legality of actions undertaken by each party during project execution.

The research further demonstrates that contractual certainty under FIDIC depends not only upon the existence of detailed contractual provisions but also upon the parties' ability to interpret and implement those provisions consistently. Although FIDIC seeks to minimize ambiguity through comprehensive drafting, large-scale construction projects inevitably generate factual circumstances that may give rise to interpretative disagreements.

These findings support the proposition that legal certainty in EPC projects is closely linked to the quality of contract administration. Clear contractual provisions alone cannot prevent disputes if project documentation, communications, and contractual procedures are not implemented consistently throughout the project lifecycle.

Contractual Rights, Obligations, and Risk Allocation under FIDIC

a. Rights and Obligations of the Employer

The findings indicate that PT SMM, acting as the Employer, possessed several important contractual rights under FIDIC Silver Book 1999. These rights included the entitlement to receive completed works conforming to contractual specifications, to monitor project performance, to request progress reports, and to terminate the contract in cases involving material contractual breaches by the contractor.

At the same time, PT SMM was subject to corresponding obligations. These obligations included making timely contractual payments, facilitating site access, providing project-related information when required, and fulfilling administrative responsibilities necessary for project implementation. The findings reveal that the contractual structure established by FIDIC imposes reciprocal duties on both parties rather than granting unilateral advantages to either side.

The dispute demonstrates that the Employer's rights under FIDIC are not absolute. Their exercise must comply with procedural and substantive requirements established by the contract. Any failure to comply with such requirements may expose the Employer to liability and counterclaims from the contractor.

The findings therefore confirm that FIDIC seeks to balance the interests of project owners and contractors by allocating rights and obligations in a manner intended to preserve project continuity while protecting legitimate commercial expectations.

b. Rights and Obligations of the Contractor

The research found that the Waskita-JPC Consortium, as Contractor, possessed contractual rights relating to payment for completed work, compensation for eligible additional works, and extensions of time under circumstances recognized by the contract.

Simultaneously, the Contractor assumed extensive responsibilities concerning project design, procurement, construction execution, testing, commissioning, and delivery of an operational facility. Unlike conventional construction contracts, EPC contracts place primary responsibility for project performance upon the contractor.

The findings indicate that this allocation of responsibilities significantly influenced the dispute. PT SMM argued that project delays and performance deficiencies justified certain contractual actions, while the contractor maintained that various circumstances entitled it to additional compensation and contractual relief.

These findings illustrate one of the defining characteristics of the FIDIC Silver Book. The contract transfers substantial project risks to the contractor while simultaneously providing contractual mechanisms through which the contractor may seek compensation when specified circumstances occur.

c. Risk Allocation as a Source of Conflict

One of the most significant findings of this study is that the dispute was fundamentally rooted in disagreements concerning contractual risk allocation. Issues relating to delayed performance, payment disputes, variation orders, termination rights, and compensation claims all reflected competing interpretations regarding which party should bear responsibility for particular project risks.

The research demonstrates that although FIDIC Silver Book contains extensive provisions addressing risk allocation, practical implementation remains challenging in complex infrastructure projects. Construction projects are inherently dynamic. Changes in project conditions, design requirements, operational circumstances, and commercial expectations frequently create situations that were not fully anticipated at the contract formation stage.

Consequently, risk allocation provisions often become focal points of dispute when unexpected events arise. The findings suggest that effective contract administration is therefore essential for ensuring that contractual risk allocation mechanisms function as intended.

Variation Orders and Additional Works as Central Sources of Dispute

a. Contractual Regulation of Variations

The study identified variation orders as one of the principal sources of disagreement between the parties. Under Clause 13 of FIDIC Silver Book 1999, the Employer possesses authority to instruct changes to the works, provided that such changes remain within the general scope of the contract.

The findings indicate that variation provisions serve an important function in EPC contracts because construction projects frequently require modifications during implementation. Such modifications may arise from technical considerations, operational requirements, regulatory developments, or unforeseen site conditions.

However, the contractual framework requires that variations follow established procedures and that corresponding adjustments be made regarding contract price and completion time when justified.

b. Disputes Regarding Additional Works

The Waskita-JPC Consortium argued that certain activities performed during project implementation constituted additional works beyond the original contractual scope and therefore entitled the contractor to additional payment. PT SMM, however, maintained that these activities remained within the contractor's existing contractual obligations.

The findings reveal that this disagreement was not merely a technical dispute concerning construction activities. Rather, it represented a legal dispute regarding contractual interpretation and entitlement.

The study demonstrates that disputes concerning additional works frequently arise when project documentation is incomplete or when instructions are issued without strict compliance with contractual procedures. In such circumstances, parties may later disagree regarding whether particular activities constitute contractual obligations or compensable variations.

The findings underscore the importance of maintaining comprehensive records, written instructions, and procedural compliance throughout project implementation.

c. Financial and Scheduling Consequences of Variations

The research found that variation orders have significant implications for both project cost and project duration. Additional works often require increased labor, materials, equipment, and management resources. Consequently, variation orders may generate substantial financial consequences that exceed initial project estimates.

Similarly, variations frequently affect project schedules. Additional works may require revised sequencing, redesign activities, procurement adjustments, or extended construction periods.

The findings indicate that failure to manage variation procedures effectively can contribute significantly to project disputes. In the present case, disagreements concerning variations formed part of a broader conflict involving payment obligations and project performance.

Effectiveness of Arbitration as a Dispute Resolution Mechanism

a. Arbitration as an Integral Component of the FIDIC Framework

The findings demonstrate that arbitration occupies a central position within the dispute resolution architecture of FIDIC-based construction contracts. FIDIC recognizes arbitration as the ultimate mechanism for resolving disputes that cannot be settled through amicable negotiation or other contractual procedures.

In the dispute under examination, the arbitration clause provided the legal basis for submitting the dispute to the Indonesian National Arbitration Board (BANI). The jurisdiction of BANI arose from the parties' contractual agreement rather than from any compulsory statutory mandate.

The findings indicate that arbitration was selected because it offered procedural flexibility, confidentiality, technical expertise, and finality. These characteristics are particularly valuable in large-scale construction disputes involving complex technical and commercial issues.

b. Speed of Dispute Resolution

The research demonstrates that arbitration provides a significantly faster dispute resolution process than ordinary court litigation. Indonesian Arbitration Law No. 30 of 1999 establishes procedural mechanisms designed to ensure efficient dispute resolution and avoid prolonged litigation.

In the construction sector, time is a critical factor. Delayed dispute resolution may result in escalating costs, stalled investments, deteriorating commercial relationships, and increased uncertainty regarding project outcomes.

The findings indicate that arbitration addresses these concerns by limiting procedural complexity and eliminating multiple appellate stages commonly associated with judicial proceedings.

From the perspective of Soerjono Soekanto's Theory of Legal Effectiveness, the existence of clear procedural rules contributes to the effectiveness of arbitration by promoting predictability and efficiency.

c. Confidentiality and Commercial Protection

The study found that confidentiality represents a major advantage of arbitration in construction disputes. Unlike court proceedings, which are generally open to the public, arbitration proceedings are conducted privately.

The findings suggest that confidentiality is particularly important in EPC projects because disputes frequently involve sensitive technical information, commercial strategies, financial data, and proprietary engineering knowledge.

In the PT SMM and Waskita-JPC dispute, arbitration enabled the parties to resolve their disagreements without exposing commercially sensitive information to public scrutiny. This characteristic contributed to preserving business reputations and protecting confidential project information.

d. Professional Expertise of Arbitrators

A major finding of this study concerns the importance of arbitrator expertise. Construction disputes often involve highly technical matters that extend beyond conventional legal analysis. Issues such as project scheduling, engineering design, variation valuation, productivity assessment, and contractual administration require specialized knowledge.

The findings indicate that arbitration offers a distinct advantage because parties may select arbitrators possessing relevant technical and legal expertise. This contrasts with ordinary judicial proceedings, where judges may not possess specialized construction knowledge.

The role of arbitrators in the present dispute extended beyond legal interpretation. Arbitrators were required to evaluate technical evidence, assess project documentation, interpret contractual provisions, and determine the legal consequences of complex construction events.

According to Soekanto's legal effectiveness framework, competent legal actors are essential for ensuring effective legal implementation. The findings suggest that arbitrator expertise significantly contributed to the quality and legitimacy of the dispute resolution process.

e. Legal Certainty Through Final and Binding Awards

The findings demonstrate that legal certainty constitutes one of the most important outcomes of arbitration. Indonesian Arbitration Law provides that arbitral awards are final and binding upon the parties. Consequently, arbitration awards generally cannot be challenged through ordinary appellate mechanisms.

The study found that this principle of finality contributes significantly to dispute resolution effectiveness. Construction projects require certainty regarding contractual rights and obligations so that commercial activities may continue without prolonged legal uncertainty.

The arbitral award in the PT SMM and Waskita-JPC dispute provided a definitive resolution of issues relating to payment claims, additional works, contractual termination, and

compensation demands. By producing a final determination of the parties' rights and obligations, arbitration fulfilled its function as a mechanism for delivering legal certainty.

f. Evaluation Based on Soerjono Soekanto's Theory of Legal Effectiveness

Applying Soerjono Soekanto's theory, the findings indicate that arbitration in this dispute functioned effectively across several dimensions.

First, the **legal factor** was satisfied through the existence of a comprehensive statutory framework provided by Law No. 30 of 1999. The legislation clearly regulates arbitration agreements, arbitral procedures, and the legal status of arbitral awards.

Second, the **law enforcement factor** was reflected in the competence and professionalism of the arbitral tribunal. Arbitrators demonstrated the capacity to evaluate evidence, interpret contractual provisions, and apply legal principles effectively.

Third, the **facilities factor** was represented by the institutional role of BANI as a specialized arbitration center capable of administering complex commercial disputes.

Fourth, the **societal factor** was evident in the parties' willingness to submit their dispute to arbitration and accept arbitration as a legitimate dispute resolution mechanism.

Fifth, the **legal culture factor** was reflected in the growing acceptance of arbitration within Indonesia's construction industry as a preferred alternative to litigation.

Overall, the findings demonstrate that arbitration successfully fulfilled the principal objectives of dispute resolution in EPC construction projects by providing procedural efficiency, confidentiality, professional expertise, and legal certainty.

Discussion

The findings collectively indicate that the effectiveness of arbitration in FIDIC-based construction disputes depends upon the interaction between contractual certainty and institutional dispute resolution mechanisms. FIDIC Silver Book 1999 provides a sophisticated framework for allocating risk and regulating contractual relationships. However, even highly detailed contractual provisions cannot eliminate disputes arising from complex project implementation.

The PT SMM and Waskita-JPC dispute demonstrates that variation orders, payment disputes, and termination rights remain significant sources of conflict despite comprehensive contractual regulation. In this context, arbitration serves as an essential mechanism for resolving interpretative disagreements and restoring legal certainty.

The study further suggests that arbitration's effectiveness derives not only from statutory recognition but also from its compatibility with the commercial realities of the construction industry. The ability to appoint technically qualified arbitrators, maintain confidentiality, and obtain final determinations within a relatively short timeframe makes arbitration particularly suitable for EPC projects.

Therefore, the results support the conclusion that arbitration remains an effective mechanism for resolving FIDIC-based construction disputes in Indonesia. Nevertheless, greater harmonization between international contractual standards and Indonesian legal principles remains necessary to reduce interpretative uncertainty and enhance contractual predictability in future EPC projects.

CONCLUSION

This study concludes that the FIDIC Silver Book 1999 adopted in the EPC contract between PT Suprabari Mapanindo Mineral and the Consortium of PT Waskita Karya (Persero) Tbk–PT Jakarta Prima Cranes has binding legal force under the principles of freedom of contract and *pacta sunt servanda* as reflected in Article 1338 of the Indonesian Civil Code. FIDIC functions as a contractual norm that regulates the parties' rights, obligations, risk

allocation, variation orders, payments, claims, termination, and compensation. From the perspective of Hans Kelsen's theory of legal certainty, FIDIC provides a clear normative framework for determining the legal relationship between the parties. However, the dispute shows that even detailed contractual clauses may still generate conflict when the parties interpret and implement them differently, particularly regarding variation orders, payment obligations, and contract termination.

This study also concludes that arbitration is an effective mechanism for resolving FIDIC-based construction disputes in Indonesia. Arbitration provides legal certainty, procedural flexibility, confidentiality, technical expertise, and finality of decision. Its effectiveness is strengthened by the role of competent arbitrators who can examine complex construction and international contract issues. The final and binding nature of arbitral awards also provides stronger legal certainty than litigation, which may involve multiple levels of appeal. Nevertheless, arbitration effectiveness depends on the parties' compliance with the arbitration clause, the quality of evidence, consistent contractual implementation, and good faith in enforcing the arbitral award. Therefore, arbitration can function effectively in FIDIC-based EPC disputes when supported by consistent contract administration and the parties' commitment to comply with the final decision.

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