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Designing the Legal Structure of Dispute Resolution in Construction Partnership Contracts: A Data-Driven Hybrid Analysis Aligned with International Joint Venture and Consortium Models

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ABSTRACT

Construction partnership contracts—particularly in modern forms such as joint ventures and consortiums—are today recognized as key instruments for the development of major economic infrastructure and national megaprojects. Countries facing legal challenges in drafting and implementing complex contracts require a fundamental revision of their contractual frameworks. The present research was conducted with the aim of formulating an indigenous legal framework for partnership-based construction contracts at the national level, grounded in international experiences and standards. The primary focus of the study is to examine structural weaknesses, legal gaps, and practical solutions for establishing an efficient contractual system in this domain. To achieve this objective, the research employed a qualitative approach using thematic analysis. The study population consisted of experts in construction law, architecture, and project management, selected through the snowball sampling method. Data were collected through semi-structured interviews and processed using a six-stage thematic analysis procedure, including coding, categorization, theme extraction, and thematic network analysis. Throughout this process, an interpretive approach was adopted to systematically represent expert perspectives and experiences and to develop a conceptual framework for designing joint venture and consortium contracts. The findings indicate that deficiencies in drafting obligations, the absence of a transparent legal structure, conflicts between domestic regulations and international requirements, and the lack of a specialized regulatory body constitute the most significant barriers to the implementation of partnership contracts in Iran. Accordingly, a conceptual model was proposed that, by emphasizing the standardization of contractual clauses, explicit definition of responsibilities, clarification of enforcement guarantees, and designing a dispute-resolution mechanism, can provide the foundation for effective execution of partnership arrangements. The results enable policymakers, project managers, and legal practitioners to more effectively draft and implement partnership contracts by developing a deeper understanding of the legal challenges and requirements.

Keywords: *construction partnership contract, joint venture, international consortium*

Introduction

In the contemporary world, national development is one of the fundamental concerns of policymakers and governments, as achieving macro-level economic, social, and infrastructural goals requires the use of efficient legal

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and managerial instruments for implementing major civil and infrastructure projects. One of the most important of these instruments is national construction partnership contracts, which—as the legal basis for implementing development projects—hold a significant place in the legal and executive systems of countries (1). However, field and theoretical assessments indicate that such contracts in Iran face serious challenges, including legal ambiguities, weaknesses in defining responsibilities, and deficiencies in dispute-resolution mechanisms—challenges that can disrupt the proper execution of projects (2).

In response to this situation, new legal and executive models have emerged internationally, among which international joint venture and consortium structures are notable. These models, due to their successful track record in developed countries, have enhanced the success rate of partnership projects through the integration of human, financial, and technical resources, increased transparency in responsibility-sharing, and optimal risk allocation (3, 4). The key advantage of these models lies in their emphasis on strategic cooperation, the use of advanced dispute-resolution mechanisms, and the alignment of parties' rights and obligations within standardized frameworks (1).

Among these, the international consortium model—an integrated system composed of multinational corporations or entities—possesses the capacity to create coherence in project management and reduce legal conflicts by combining diverse experiences and competencies. In addition to risk and resource distribution, consortiums facilitate compliance with international requirements and enhance attractiveness for foreign investors (5).

These advantages emerge while traditional construction partnership contracts in Iran remain hindered by complex bureaucracies and legal gaps in areas such as intellectual property, financial arrangements, and authoritative dispute-resolution mechanisms. Considering these challenges, it is essential to design a new framework for national construction partnership contracts that aligns with domestic legal structures and incorporates international experiences. Such a framework must, while retaining the capacities of domestic law, integrate international partnership principles such as legal transparency, precise delineation of responsibilities, contractual structuring under uncertainty, and the use of arbitration and mediation mechanisms.

In other words, the objective of this study is to develop an effective legal model for partnership in national development projects—one that not only resolves existing obstacles but also fosters investor confidence and enhances the governance of national projects. The primary innovation of this study lies in explaining and designing a new framework for national construction partnership contracts based on the combined strengths of two successful international legal and executive models: the joint venture and the international consortium. This innovation not only redefines existing contractual approaches within Iran's legal system but also provides an operational model aligned with domestic legal requirements, thereby facilitating conformity with internationally accepted principles and increasing the nation's capacity to attract foreign investment.

Another innovation of this research is the establishment of an integrated system concerning "responsibility allocation," "risk management," and "dispute resolution" within partnership contracts—an approach that has rarely been addressed in a combined and coherent manner within Iranian legal scholarship. Moreover, by employing comparative analyses and emphasizing the practical dimensions of this framework within Iran's unique legal and economic context, the study presents a distinct contribution—particularly at a time when the country is in need of efficient legal tools to overcome developmental challenges and execute infrastructure projects.

The primary purpose of this article is to propose a legal-executive model for national construction partnership contracts that can function as an indigenous framework applicable in policymaking, contract drafting, and managing large-scale national projects. The present article seeks to analyze the theoretical and practical structures of joint

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ventures and international consortiums, clarify the requirements for adapting them to Iran's legal system, and ultimately design a comprehensive model for use in national development projects. This objective is pursued through document analysis, examination of existing challenges, and extraction of legal solutions based on international experiences in order to pave a new path for effective and sustainable partnership in national development initiatives.

Literature Review

Numerous domestic studies show that construction partnership contracts have become one of the most common development methods in recent years. Vaziri Yeganeh and colleagues (2023) emphasize that these contracts are based on collaboration between the owner and the builder according to their respective contributions, and although pre-sale of units is common, termination of a partnership contract after pre-sale can cause serious legal complications for buyers. This issue particularly depends on whether the contract is formal or informal and whether its termination can be invoked by third parties (6).

Lotfi Neyestanak (2022) also highlights the absence of codified legislation in this field, identifying the increase in litigation related to construction partnerships as one of the consequences of existing legal gaps. He stresses the need for precise legal analysis and identifies lack of contractual transparency, disputes over profit-sharing, construction quality, and delays in execution as major barriers (7).

Amoozadeh and colleagues (2022) emphasize the importance of arbitration in resolving disputes arising from construction partnership contracts. In their view, arbitrators must possess both technical knowledge and legal expertise because disputes related to cost, delivery time, and construction quality cannot be resolved without technical-legal arbitration (8).

Qorbāni (2021), focusing on national mass-construction projects, identifies risks associated with partnership contracts and demonstrates that these contracts face threats and opportunities such as environmental uncertainties, costs, quality, and delivery time. SWOT analysis in this study reveals that the absence of standardized contracts increases risk (9).

Bashiri and colleagues (2021) examine challenges in civil partnership in construction and show that inflation, rising costs, and lack of legal awareness have contributed to the growth of litigation in this field. They emphasize the necessity of identifying challenges prior to resolving disputes (10).

Rahimi (2021) analyzes the role of the "penalty clause" in preventing damages resulting from non-performance by the builder and shows that including precise conditions in the contract can reduce the risk of delay or non-performance (11).

Najafloo (2021) studies the legal nature of construction partnership contracts and argues that such contracts require substantive legal analysis to determine their precise legal status, including whether their obligations are strictly binding (12).

Majidi (2019), in two separate studies, addresses "hardship in performing obligations" and "pre-contractual liability in construction negotiations." He shows that under hardship conditions, contract modification or termination is possible, and that unjustified withdrawal from pre-contractual negotiations can lead to liability for damages (13, 14).

Fahimi Bāyrāmi (2019; 2018) examines the civil liability of parties in construction partnership contracts and analyzes the place of such contracts under Article 10 of the Civil Code, noting that partnership in construction

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creates joint ownership followed by division, and must be interpreted through both customary and legal perspectives (15, 16).

On the international level, recent research has explored the legal and managerial dimensions of partnership arrangements such as joint ventures and consortiums. Zhang and colleagues (2020) show that legal complexities and differences between legal systems among partners in international construction projects are major causes of delays and increased costs. They emphasize the need for contractual transparency and the inclusion of dispute-resolution mechanisms such as arbitration (17).

Li and colleagues (2019) present similar findings and note that the absence of appropriate local legislation or failure of a contract to align with the host country's legal system is the most common reason for the failure of international joint ventures. Their research also highlights the critical role of international legal advisors in risk mitigation (18, 19).

Wang and colleagues (2022) adopt a comparative approach and identify weaknesses in legal frameworks in developing countries as key factors that increase risks in partnership contracts, emphasizing the need for standardized contract drafting, training of project managers, and the use of technology (20, 21).

In the field of consortiums, Johnson and colleagues (2019) explore the role of international consortiums in technology transfer in energy projects and highlight the importance of conflict management, clear assignment of roles and responsibilities, and the use of international arbitration (22).

Lee and colleagues (2021) consider cultural differences an important factor in reducing coordination within consortiums and suggest that creating multicultural teams and cross-cultural training can enhance success (23).

Smith and colleagues (2020) examine risk management in infrastructure consortiums and emphasize that responsibility allocation, precise risk assessment, and the use of simulation tools play crucial roles in the success of major projects (24).

The research gap in the field of national construction partnership contracts—particularly regarding legal frameworks derived from international joint venture and consortium models—can be identified from several perspectives. While most domestic studies have examined technical, legal, and managerial challenges in traditional partnership contracts, they have generally neglected the development of an integrated framework adapted to Iran's legal conditions and based on international structures.

Internationally, successful models of joint ventures and consortiums have demonstrated that transparency in responsibilities, risk allocation, and efficient dispute-resolution mechanisms lead to reduced conflicts and improved project performance. However, adapting and implementing these models within Iran's legal context remains fraught with ambiguities and limitations.

Moreover, domestic research has largely focused on legal disputes or economic analyses of partnership contracts, with limited attention paid to comparative evaluation of international structures. Additionally, the absence of indigenous models that integrate international frameworks with Iran's specific legal, cultural, and economic conditions represents a significant gap. This gap not only hinders foreign investment and international cooperation in development projects but also challenges the efficiency of national infrastructure initiatives.

Therefore, designing a new, comparative, and localized framework addressing construction partnership contracts based on international joint venture and consortium models constitutes an essential step and forms the starting point of the present research.

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Research Methodology

The methodology of the present study, aimed at explaining the framework for national construction partnership contracts based on joint venture and international consortium models, is qualitative in nature and grounded in the strategy of thematic analysis. The choice of this method aligns with the research objective, which is the precise identification of conceptual, legal, and operational dimensions of international partnerships in national construction projects in Iran. Thematic analysis provides the capability to extract meaningful and hidden patterns from unstructured data such as interviews and legal or contractual texts. The study is designed within an interpretive paradigm, which emphasizes understanding social phenomena based on the perceptions, interpretations, and subjective interactions of stakeholders. The interpretive approach rests on the assumption that social knowledge is multilayered and dynamic, shaped through human interactions, and its comprehension requires referring to the experiences and insights of stakeholders, especially in complex environments such as national-scale joint venture and consortium contracts.

At the first layer of methodology, the study is developmental in orientation, as its goal is to present an applied framework for improving the quality of partnership contracts in national projects. From the perspective of reasoning, the research uses a hybrid model combining inductive and deductive approaches: the qualitative phase is largely inductive, focused on discovering themes and concepts from interview data and documents, while the modeling phase relies on deductive reasoning to propose an operational framework. In terms of strategy, a multiple case study design was adopted. This allowed the researcher to conduct an in-depth examination of legal and operational experiences in real partnership projects in Iran, with emphasis on both successful and unsuccessful consortia and joint ventures, to perform a comparative analysis of patterns and structural deficiencies in contract implementation. Data were collected from two primary sources: semi-structured expert interviews and analysis of legal documents and partnership contracts.

Data collection was conducted through in-depth, semi-structured interviews with fifteen experts in international contract law, managers of national projects, economic consultants of construction projects, and specialists experienced in international partnership models. Snowball sampling was used to select participants, which is suitable given the specialized nature of the expert community. Interviews concluded upon reaching theoretical saturation.

Data analysis was carried out through thematic analysis and consisted of six stages: (1) familiarization and immersion in the data, (2) initial coding, (3) theme searching, (4) reviewing themes, (5) defining and naming themes, and (6) writing the analytical report. In this process, data were segmented into conceptual codes and then organized into conceptual networks. In the final stage, the theme network was formed, consisting of basic themes, organizing themes, and overarching themes. For analyzing the theme network, the approach proposed by Clarke and Brown (2006) was applied, which systematically evaluates the internal coherence and external distinctiveness of themes. Temporally, the research follows a cross-sectional design, meaning that data collection and analysis were conducted within a defined time frame. At the same time, the study adopts a retrospective view by reviewing past experiences of international partnerships in construction projects in Iran. This allowed the researcher to identify recurring patterns or structural deficiencies based on historical and field evidence. Finally, the validity and reliability of the study were strengthened through three triangulation techniques: combining interview and document data, participant validation of findings, and concurrent analysis by multiple researchers. This approach ensures that the

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outcomes of the study are not only academically credible but also practically applicable in drafting future national construction contracts aligned with international joint venture and consortium standards.

Findings

The data analysis process was conducted using thematic analysis. This approach, by focusing on identifying recurring and meaningful themes in participants' responses, provided the foundation for a comprehensive examination of the hidden, diverse, and multilayered dimensions of partnership contracts in the construction domain. Through thematic analysis, initial codes were extracted from interviews and systematically categorized into basic, organizing, and overarching themes. The resulting theme networks shaped the conceptual structure of the research and provided the basis for final model development.

The findings are organized around the eleven main interview questions. For each question, key themes were identified, followed by an examination of code frequency and conceptual patterns, and finally an interpretation of the data. These analyses, based on expert perspectives and legal documents, explore various legal, contractual, operational, and institutional aspects of partnership in construction projects. A notable point in this chapter is the emphasis on legal and contractual dimensions of partnership, particularly the lack of binding frameworks, the absence of specialized legal oversight bodies, regulatory inconsistencies, and weaknesses in contract drafting. The findings also indicate that leveraging joint venture and consortium mechanisms at the international level can help address existing gaps in the domestic contractual system.

In the general overview of qualitative findings, it is first necessary to highlight the scientific approach adopted. The present study uses a hybrid methodology with emphasis on directed qualitative content analysis, and through semi-structured interviews with experts in construction contract law, it investigates the fundamental themes, challenges, differences, and legal requirements of joint venture and consortium models in Iran's legal environment. Based on the data analysis framework, interview data were examined and categorized in three coding stages: open, axial, and selective coding. In the first stage, meaningful statements from the interviews were extracted as initial codes. These codes, reflecting key expressions and frequently repeated concepts in participants' statements, were then grouped into homogeneous conceptual categories and converted into intermediate themes. Ultimately, through conceptual refinement, twelve overarching themes were extracted as the core components of the proposed legal structure for joint venture and consortium-based construction partnership contracts.

Question 1: What are the most significant legal challenges in drafting construction partnership contracts in Iran?

Table 1. Initial Codes Extracted from Interview Question 1:

Row	Participant	Code 1	Code 2	Code 3	Code 4
1	Participant 1	Lack of clarity in responsibility boundaries	Weakness in enforcement of obligations	Absence of specific regulations for partnership	Ambiguity in legal structure of the contract
2	Participant 2	Absence of standard contractual templates	Excessive interpretability of clauses	Lack of unified legal guidelines	Inability to draft financial provisions
3	Participant 3	Conflict between upper-level and executive laws	Lack of consistent judicial practice	Ambiguity in interpretation of the Civil Code	Inconsistency of construction-related regulations
4	Participant 4	Imbalance in risk allocation	Ambiguity in termination clauses	Absence of legal structure for partnership dissolution	Lack of standardized partnership procedures
5	Participant 5	Dependence on informal relations	Lack of clarity in financial commitments	Weakness in contract documentation	Absence of legal institutional support

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6	Participant 6	Lack of construction contract law specialists	Ambiguity in legal status of partnership	Weakness in defining ownership rights	Misalignment with judicial system
7	Participant 7	Absence of clear arbitration mechanisms	Interference with municipal regulations	Multiplicity of licensing authorities	Lack of structured dispute-resolution framework
8	Participant 8	Complexity of land ownership	Conflict with municipal laws	Weakness in title transfer	Ambiguity in drafting official partnership deeds
9	Participant 9	Limitations in registering partnership contracts	Ambiguity in benefit distribution	Absence of legal oversight tools	Conflicts in contract interpretation
10	Participant 10	Frequent regulatory changes	Lack of stability in executive rules	Weakness in legal guarantees	Ambiguity in bank-related obligations
11	Participant 11	Insufficient rules for proving negligence	Ambiguity in determining damages	Weakness in dispute-resolution processes	Lack of effective and binding arbitration
12	Participant 12	Absence of mechanisms for rights transfer	Misalignment with foreign partners	Lack of adaptive guidelines	Conflict with international conventions

Table 2. Initial Codes Extracted from Interview Question 2

Participant	Code 1	Code 2	Code 3	Code 4
Participant 1	Differences in the legal language of international contracts	Lack of localized models	Legal barriers for foreign company participation	Absence of coherent arbitration systems
Participant 2	Limited familiarity with consortium structures	Ambiguity in applying international arbitration rules	Differences in insurance requirements	Challenges in responsibility coordination
Participant 3	Differences in international contract standards	Difficulty in legal translation of contractual clauses	Ambiguity in settlement procedures	Limited experience in legal interaction with foreign parties
Participant 4	Ambiguity in defining each partner's role	Differences in parties' legal systems	Absence of unified international guidelines	Weakness in adapting contractual templates
Participant 5	Lack of transparency in authority allocation	No predefined mechanisms for international dispute resolution	Misalignment with national judiciary	Absence of monitoring and legal reporting mechanisms
Participant 6	Absence of regulatory harmonization bodies	Conflict with domestic public law	Lack of enforcement power in memoranda	Ambiguity in the legal role of advisors
Participant 7	Lack of international legal education in construction	Absence of joint regulatory institutions	Cultural-legal barriers to contract interpretation	Shortage of experts in international law
Participant 8	Weakness in legal interpretation of technical terminology	Inability to comply with foreign technical standards	Conflict with currency regulations	Differences in accounting systems
Participant 9	Differences in guarantee-related laws	Differences in damage-compensation mechanisms	Ambiguity in shared legal responsibilities	Absence of unified benefit-distribution frameworks
Participant 10	Lack of cohesion in ownership structure drafting	Weakness in institutionalizing control procedures	Scheduling incompatibilities	Conflicts in performance evaluation systems
Participant 11	Ambiguity in drafting joint scheduling frameworks	Ambiguity in official registration of joint companies	Inconsistency with service export regulations	Lack of transparency in annex documentation
Participant 12	Differences in understanding joint responsibility	Challenges in dividing intellectual property rights	Conflicts in project tax registration	Ambiguity in legal validity of contract translations

The analysis of interviews concerning the differences between Iranian contractual structures and international joint venture and consortium models indicates that Iran's legal system faces fundamental challenges in aligning with international standards. Among the most significant issues are the absence of localized frameworks, differences in legal language and contract structure, weaknesses in arbitration mechanisms, and the lack of guidelines for harmonizing domestic regulations with international norms. Participants also emphasized the shortage of specialized legal institutions, insufficient expertise in comparative law, and weaknesses in procedures

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for joint operations with foreign companies. These challenges prevent Iranian contracts from possessing the flexibility and transparency required for multinational collaborations and increase the legal risks of projects.

Regarding the allocation of responsibilities and authority, the analysis shows that the absence of a precise task matrix, overlap of technical, legal, and financial roles, and lack of clarity in differentiating decision-making powers among parties constitute major legal obstacles during project implementation. Participants believe that without supplementary documents such as detailed annexes, complementary contracts, clear control structures, and performance indicators, it is impossible to manage partnership projects effectively. Particularly in consortium contracts, where roles and responsibilities are diverse and extensive, the inability to accurately define responsibilities can lead to significant disputes and costly delays in implementation. These findings highlight the urgent need to revise the processes of drafting and executing partnership contracts.

Question Three: How should the allocation of responsibilities and powers between the parties be managed in the process of forming these contracts?

Table 3. Analysis of Question Three – Initial Codes Table

Participant	Code 1	Code 2	Code 3	Code 4
Participant 1	Failure to accurately define responsibilities in the contract	Imbalance in executive power between the parties	Lack of provisions for reviewing responsibilities	Lack of precise understanding of the parties' rights and obligations
Participant 2	Ambiguity in the boundaries of executive authority	Absence of a mechanism for resolving disputes over authorities	Problems in distinguishing phase-based tasks	Ambiguity in changing roles during the project
Participant 3	Absence of a responsibility allocation matrix	Conflicts in the parties' scope of services	Ambiguity in supervisory responsibilities	Weakness in defining the hierarchy of authority
Participant 4	Overlapping duties between partners	Lack of explicit clarification in the initial contract	Overlap between the employer's and partner's powers	Absence of a clear control structure
Participant 5	Weakness in the framework of decision-making powers	Lack of a joint decision-making model	Absence of performance indicators for each responsibility	No separate contract for managing powers
Participant 6	No consistent practice for allocating responsibilities	Weakness in distinguishing project management from construction management	Insufficient formal documentation of task allocation	Ambiguity in coordination with project consultants
Participant 7	Ambiguity in the reporting structure	Misalignment with the organizational structures of the parties	Absence of a supplemental agreement on the scope of authority	Divergent interpretations of the contract text
Participant 8	Absence of a detailed statement of duties	Conflicts over the extent of financial decision-making power	Ambiguity in implementing joint tasks	No clearly defined legal role for consultants
Participant 9	Lack of a supplemental contract for separating powers	No coordination in the exercise of managerial authority	Absence of regulatory standards governing authority	Ambiguity in the official registration of contractual powers
Participant 10	Misunderstandings about technical and financial responsibilities	Lack of a clear procedure for revising powers	Indeterminacy in the scope of contractual authority	No distinction between tortious and contractual liability
Participant 11	Failure to define key roles in the project	Ambiguity in allocating powers in crisis situations	Difficulties in assigning risk to specific tasks	Conflicts in responsibility for joint decisions
Participant 12	Ambiguity in the scope of legal accountability	Disagreement over emergency technical powers	Lack of balance in participation in decision-making	No distinction between managerial and operational functions

Question Four: What legal mechanisms are more effective for risk allocation between the parties within joint venture contracts?

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Table 4. Analysis of Question Four – Initial Codes Table

Participant	Code 1	Code 2	Code 3	Code 4
Participant 1	Absence of an explicit clause on risk allocation in the contract	Ambiguity in the scope of legal liability arising from financial risks	Lack of a draft side agreement for legal risk-sharing	No detailed clause on how risk is to be controlled
Participant 2	Ambiguity in clauses relating to liability for compensation of damages	No contractual practice for adjusting risk clauses during implementation	Ambiguity in clauses on sharing the costs of damages	Lack of alignment between risk clauses and BOT contract principles
Participant 3	Failure to provide a force majeure clause for specific risks	No binding clause requiring risk status reporting	No reference to a joint obligation clause for funding compensation sources	Ambiguity in implementing legal clauses during risk-related arbitration
Participant 4	Absence of a guarantee clause for obligations in crisis conditions	Lack of a clear legal framework for assessing risk-related damages	No binding structure for official registration of risk clauses	No standard definition of insurable risks
Participant 5	Ambiguity in clauses on transferring risk to the contractor	Ambiguity in drafting clauses separating legal and technical risks	Ambiguity in determining forums for hearing risk-related claims	Lack of coordination between risk clauses and banking regulations
Participant 6	No specific insurance clause for critical risks	No clarification of boundaries of responsibility in supervision and execution clauses	No separation of risks in the main contract and those of subcontractors	Ambiguity in conditions triggering penalty clauses for default
Participant 7	Absence of a contractual obligation to disclose potential risks	No possibility to revise risk clauses in line with legal changes	Ambiguity in financial obligations when facing legal risks	Lack of a binding legal framework for monitoring risk implementation
Participant 8	Ambiguity regarding enforcement of risk-related clauses	No draft addendum for risk clauses after contract signing	No provisions in the clauses for changing market conditions	No legal arrangement for multi-party disputes over risk
Participant 9	No precise legal definition of joint risks	Ambiguity in enforcing risk clauses in supplemental contracts	Conflicts among clauses governing risk distribution between parties	No contractual appendix detailing risk responsibilities
Participant 10	Absence of a specific dispute resolution clause for risk-related issues	No legal guidelines for validating insurance clauses	Misalignment between domestic clauses and international agreements	No clear insurance agreement for crisis conditions
Participant 11	Conflicts among mutual obligation clauses when facing risks	Ambiguity in guarantees for proper implementation of risk transfer	No contractual requirement for periodic risk review	Lack of legal indicators for evaluating risk clauses
Participant 12	Lack of alignment between risk clauses and FIDIC standards	Absence of legal tools to pursue breaches of risk clauses	Ambiguity in the timetable for implementing reactive risk clauses	Ambiguity in the interpretive authority for high-risk clauses in disputes

Question Five: Methods of Determining Ownership of Assets and Contributions

In this section, participants referred to numerous challenges and ambiguities in determining the ownership of assets and the parties' intellectual, financial, and equipment-based contributions. One of the main concerns was the absence of explicit and detailed clauses on each party's share of contributions, particularly in relation to non-cash and intangible inputs such as know-how and intellectual property. In most responses, the lack of formal documentation for ownership registration, the absence of standard procedures for acquiring assets, and weaknesses in anticipating proprietary rights in cases of contract termination or rescission were identified as major gaps in the legal design of such contracts. The answers also indicated conflicting legal interpretations of concepts such as "usufruct ownership," "legal ownership," and "gradual acquisition," all of which require clear definition in contractual documents.

Question Six: Harmonizing Domestic Legal Requirements with International Standards

Responses in this section showed that aligning national construction law with international standards such as FIDIC, UNCITRAL, or EPC and BOT contract models faces fundamental challenges. The key issues include inadequate training in comparative law, the lack of clear judicial precedents, conflicts between national law and

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principles of international contracts, and the absence of advisory or regulatory institutions for legal harmonization. Many participants emphasized the necessity of drafting guidelines and harmonization annexes in contractual documents to prevent disputes arising from the interpretation and implementation of legal obligations.

Question Seven: Preventive Clauses for Legal Disputes

Interviewees noted that one of the most effective mechanisms for reducing legal disputes is the precise inclusion of preventive clauses in the contract. Weaknesses in defining stages of dispute resolution, the absence of binding arbitration structures, and the lack of mechanisms for documenting disputes were among the challenges identified. It was also stressed that contracts should include early warning systems, mandatory arbitration clauses, systems for recording events leading to disputes, and indicators for measuring the intensity of disputes. These clauses not only help prevent the emergence of conflicts but also facilitate their efficient and timely management within a clear legal framework.

Question Eight: Designing a Dispute Resolution System (Arbitration, Courts, etc.)

One of the key themes in responses to this question was the necessity of precisely defining the status of the dispute resolution body and the procedure for referring disputes to it. Most interviewees emphasized the lack of clarity in choosing the arbitral forum, ambiguities in the interaction with domestic and international courts, and the absence of judicial experience in consortium and joint venture disputes. Weak drafting of arbitration clauses, failure to provide for mutually agreed arbitrators, lack of a clear timetable for arbitration, and the absence of specialized arbitration institutions were also highlighted as major issues. These responses show that designing a dispute resolution system must be carried out with a thorough understanding of the project structure, the governing legal system, and the financial and temporal sensitivities of the contract.

Table 5. Initial Codes Related to Questions 5–8

Participant	Question 5 – Code 1	Question 6 – Code 1	Question 7 – Code 1	Question 8 – Code 1
Participant 1	Absence of an explicit clause defining ownership of non-cash contributions	Lack of a unified legal authority for standard harmonization	No explicit preventive dispute clause in the contract	No clearly defined place for arbitration in the contract
Participant 2	Ambiguity over ownership of shared equipment and machinery	Conflicts between domestic laws and principles of international contracts	Absence of an internal dispute resolution mechanism	Ambiguity in choosing a domestic or international dispute resolution forum
Participant 3	Lack of formal procedures for registering ownership of joint assets	Ambiguity in harmonizing tax laws with foreign standards	Ambiguity in the priority order of dispute clauses	Absence of specific provisions for determining the competence of dispute forums
Participant 4	No distinction in ownership of benefits arising from exploitation	Absence of executive guidelines for integrating national and international rules	No obligation to engage in mandatory negotiations prior to arbitration	Lack of consensus on the type of arbitration (institutional or ad hoc)
Participant 5	Failure to accurately record intellectual property ownership in project designs	Lack of monitoring mechanisms for compliance with international conventions	No legal framework for anticipating potential disputes	No obligation to resolve disputes outside the courts
Participant 6	Conflicting legal interpretations of joint ownership	Lack of legal training on international contracts in national projects	Absence of a clear clause defining responsibilities in crisis situations	No enforcement mechanism for arbitral awards
Participant 7	Absence of a supplemental contract for asset ownership allocation	Conflict between public law requirements and commercial logic of foreign contracts	No internal arbitration system before referral to a third-party institution	Ambiguity about the validity of foreign arbitral awards in Iran
Participant 8	Ambiguity in the transfer of ownership of contributions at project completion	Multiplicity of decision-making legal bodies preventing coherent harmonization	Conflicts between dispute clauses and higher-level regulations	Lack of coordination between dispute clauses and project structure

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Participant 9	Absence of a legal framework for land ownership in joint projects	Lack of procedural harmonization between national contract models and FIDIC	No provision for mediation prior to judicial referral	No prior agreement on the legal forum for dispute resolution
Participant 10	Weak enforcement of domestic ownership documents	Absence of legal criteria for prioritizing in case of conflict of laws	No legal clause for documenting the causes of disputes	Multiplicity and overlap of jurisdiction among dispute resolution authorities
Participant 11	Lack of a clear legal framework for ownership of temporary assets	Structural conflicts in interpreting domestic and international legal provisions	Ambiguity in criteria for determining breach of contract	Lack of alignment between arbitration practice and public law requirements
Participant 12	Ambiguity in valuation and fixation of contributions	Absence of localized obligations within international standard frameworks	No binding timetable for the dispute resolution process	Lack of specialized arbitration roles in technical issues of the contract

In the following, a descriptive analysis of the interview findings regarding Questions Nine to Eleven is presented. This part of the analysis examines the legal challenges, limitations, and sensitivities related to consortium structures, the implementation of guarantees, and the requirements applicable to force majeure conditions and termination of construction partnership contracts.

Legal capacity of existing regulations for recognizing consortiums:

Most participants referred to a clear legal gap in defining and recognizing the “consortium” structure within the Iranian legal system. The absence of a standard contractual template for multilateral agreements, weaknesses in dissolution guidelines, lack of coverage for joint intellectual property, and the absence of a specialized authority for registration and oversight were identified as major shortcomings. Furthermore, the lack of a designated legal entity to regulate consortium contracts and the limited experience in adjudicating disputes arising from such structures are counted among the main obstacles to their acceptance in national construction practice. In particular, the tension between domestic commercial law and the multi-partner logic of consortiums, when interpreting responsibilities and ownership, is considered one of the most serious challenges.

How guarantees are drafted and enforced in these contracts:

Participants pointed to the absence of a clear legal framework for various types of financial securities such as “performance bonds” and “advance payment guarantees.” Ambiguity in identifying beneficiaries, lack of insurance coverage, absence of instructions for extension and renewal of guarantees, lack of coordination with banks, and weaknesses in aligning guarantees with the requirements of international projects were among the main themes of the analysis. From a legal perspective, the lack of financial annexes, absence of a supervisory authority, and the lack of a monitoring system over issuing banks also undermine the robustness of these guarantee instruments.

Legal considerations in defining force majeure and termination:

Multiple challenges were raised concerning force majeure clauses and contract termination. Interviewees emphasized the absence of a precise definition of force majeure in legal documents and contracts, and noted that the lack of explicit clauses on specific conditions, termination procedures, and methods for recording critical events leads to complex conflicts. Additionally, the absence of an independent assessment body to determine force majeure, conflicts with labor law, ambiguity regarding the effects of termination on asset ownership and guarantees, and the lack of training requirements for lawyers and consultants in this area were all identified as structural weaknesses.

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Table 6. Initial Codes for Questions 9 to 11

Question	Participant	Code 1	Code 2	Code 3	Code 4
9	Participant 1	No clear legal definition of consortium	No standard model contract for consortiums	No possibility of transferring partners' shares without collective consent	Lack of institutional capacity to draft complex contracts
9	Participant 2	Ambiguity regarding the registration authority for consortiums	Ambiguity in tax regulations for consortiums	Absence of a dedicated legal body for organization	No judicial solution for disputes
9	Participant 3	Absence of executive bylaws	Lack of rules for dissolution and partner exit	No facilities for participation in tenders	Conflicts in defining asset ownership
9	Participant 4	No judicial precedent for consortium disputes	No clauses on allocation of risk and responsibility	Ambiguity regarding joint and several liability	No rules for a joint financial plan
9	Participant 5	Conflict of regulations with multi-partner structures	Weak oversight over consortium partners	No registration of intellectual property rights	Absence of a strategic legal roadmap
10	Participant 1	No legal standard for guarantees	No requirement for performance guarantees	Conflict with general contract conditions	No guarantees for consultancy services
10	Participant 2	Ambiguity in designating the beneficiary	No complementary insurance coverage	No clear legal annex	No coverage for project delays
10	Participant 3	Lack of alignment between guarantee and contract	Ambiguity in enforcement by third-party bodies	No transparency in acceptance abroad	No shared structure between bank and beneficiary
10	Participant 4	No supervisory body for guarantee enforcement	No guidelines for extension	No requirement for official translation	Conflicting guarantee forms
10	Participant 5	Ambiguity in guarantee termination clauses	No joint domestic–foreign guarantee	No clarity in conditions of invalidation	No ranking system for guarantees
11	Participant 1	Ambiguity in the definition of force majeure	No explicit termination clause	No distinction between domestic and international aspects	No warning system in the contract
11	Participant 2	No crisis agreement	Ambiguity in identifying force majeure	No legal analysis of political crises	No supportive annex for crisis management
11	Participant 3	No index for measuring the impact of force majeure	No consistent judicial practice for termination	No financial criteria for termination-related damages	No independent body to assess force majeure
11	Participant 4	No mechanism for reporting emergency conditions	Conflict between voluntary and compulsory termination clauses	No standard for phased termination	No mandatory pre-termination negotiations
11	Participant 5	No authority to determine force majeure	No termination timetable	No side agreement for controlling termination risks	No legal training on crisis in contracts

These findings show that, in order to develop a comprehensive and enforceable legal framework for construction partnership contracts based on international models, a serious revision of guidelines, supervisory mechanisms, and the national legal education system is required.

The axial codes extracted from the interviews reflect the fundamental challenges and requirements in drafting construction partnership contracts based on international joint venture and consortium models. These codes are grouped into twelve key axes, including: lack of standard contractual models, ambiguity in defining responsibilities, misalignment with international regulations, absence of a clear legal system for asset ownership, weaknesses in risk allocation structures, challenges related to guarantees, conflicts in interpreting force majeure and termination conditions, absence of effective dispute resolution mechanisms, weaknesses in legal registration and oversight systems, limitations in recognizing consortiums in national law, inconsistency with international standards, and lack

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of specialized training for drafting complex contracts. These codes highlight the foundational layers of the legal structure needed for the success of multilateral construction partnerships and clearly reveal the need for structural reforms, the drafting of standard documents, and strengthening the legal capacity of relevant institutions.

Table 7. Axial Codes Extracted from Qualitative Interview Analysis

Axial Code	Description
Lack of clarity in the legal structure of partnership contracts	The absence of standard contractual models, overlapping regulations, and lack of consistent legal interpretation prevent the drafting of clear and reliable construction partnership contracts.
Absence of an effective mechanism for defining powers and responsibilities	Ambiguity in scope of services, overlapping duties, and lack of complementary agreements have led to challenges in delineating the parties' authority.
Legal challenges in aligning with international models	Conflicts between legal systems, lack of alignment in contractual language, and weaknesses in localizing international standards hinder the use of joint venture and consortium models.
Weaknesses in arbitration and dispute resolution systems	The lack of clear domestic and international arbitration structures, ambiguity in costs and procedures, and absence of specialized arbitral institutions have created major difficulties in resolving disputes.
Ambiguity in determining ownership of assets and contributions	The absence of formal mechanisms to register and distinguish ownership, disagreements over proprietary rights, and lack of procedures for registering intellectual property have made ownership issues highly contentious.
Lack of coherence in guarantee and security structures	Weak drafting of bank and legal guarantees, lack of transparency in amounts, duration, and enforcement processes, and absence of clear legal annexes are among the major challenges in this area.
Ambiguity in defining and enforcing force majeure and contract termination	The absence of a precise definition of force majeure, lack of clear judicial precedents, conflicts with domestic laws, and the absence of protective clauses in emergency conditions have complicated the implementation of these concepts.
Absence of a legal approach for aligning with consortium standards	The lack of bylaws, guidelines, and coherent legal policies for recognizing consortium structures in Iran's legal system has created serious challenges in multilateral partnership projects.

The axial codes presented in the table represent a systematic categorization of key concepts derived from the content analysis of the interviews. In this framework, each main axis reflects a fundamental challenge or core component in drafting construction partnership contracts based on international joint venture and consortium models. For example, the first axis, "ambiguity in the legal structure of contracts," clearly reflects one of the foundational problems in Iran's contractual system, as the absence of clear definitions of the nature of partnership, the parties' powers, and governing legal frameworks results in significant inconsistencies at the implementation stage.

In axes such as "lack of a unified dispute resolution framework" and "structural conflicts in arbitration systems," the role of judicial and arbitral institutions as key pillars in ensuring proper contract performance is highlighted. Weaknesses in determining the appropriate dispute resolution forum, lack of effective mediation and arbitration models, and inconsistency in enforcing arbitral awards lead to parties' distrust in dispute resolution mechanisms and increase contractual risk.

Similarly, in the axis "ambiguity in ownership of assets and contributions," multiple challenges emerge regarding proprietary rights, intellectual property, and methods for registering and formally transferring the assets of joint projects, indicating the necessity of drafting more precise legal standards. At a broader level, axes such as "lack of a framework harmonized with international standards" and "absence of effective legal guarantees" point to weaknesses in Iran's legal and institutional infrastructure in dealing with complex international structures. These shortcomings severely limit the possibility of establishing effective partnerships with foreign companies and pose a serious obstacle to participation in large projects with consortium-based structures. Accordingly, the need for legal

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structural reform, strengthening specialized training, and drafting harmonized guidelines and operational procedures are among the essential measures that should be considered at the policymaking and legislative levels.

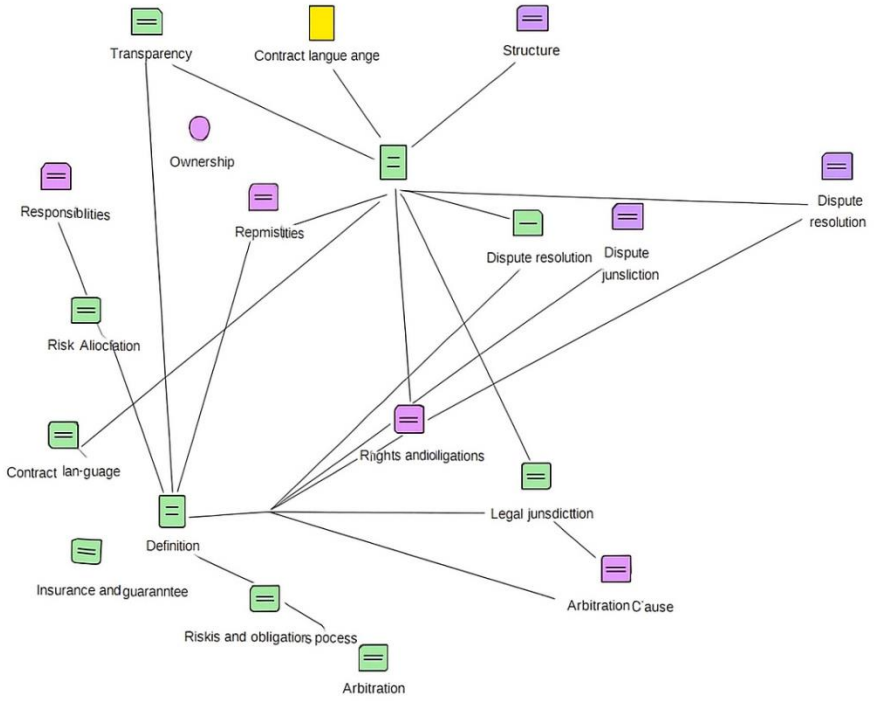

Figure 1. Model of the Legal Structure of Dispute Resolution in Construction Partnership Contracts

The diagram presented illustrates a visual model of thematic analysis of qualitative data in MaxQDA, which organizes and extracts themes through open and axial coding. This diagram depicts the relational structure between concepts and categories, clearly visible as colored nodes and connecting lines. In this structure, each axial code is linked by lines to basic codes and sub-concepts, indicating their mutual influence and semantic relationships. In other words, this conceptual model embodies the underlying semantic structure revealed in the interviews and qualitative analyses.

In the diagram, green nodes represent axial codes acting as central meaning hubs to which other concepts are connected. These codes include axes such as “legal challenges,” “legal gaps,” “weaknesses in contract drafting,” and “institutional obstacles,” each linked to several subcodes. Pink and purple nodes represent basic themes and raw data extracted from the interviews. This structure enables the researcher to clearly distinguish conceptual layers of meaning. The relationships between nodes are depicted through directional lines that show which codes are causally or functionally related. For example, the code “absence of binding documents” connects directly to the axial code “gap in enforcement guarantees,” which in turn links back to “legal challenges in partnership projects.” Such a structure is highly useful for developing the theoretical and practical framework of an article or thesis, as it clarifies conceptual relationships and facilitates multilayered analysis of concepts.

Ultimately, the diagram produced by MaxQDA functions as a “concept map” of the participants’ perspectives in the study. This map enables the researcher to gain an integrated understanding of the relationships among factors affecting construction partnership contracts. This visual model is particularly useful in legal research in interdisciplinary fields such as construction law or international contracts and can serve as a basis for presenting the theoretical framework or final model of the study.

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Conclusion

This study, conducted with the aim of explaining a framework for national construction partnership contracts based on joint venture and international consortium models, sought to identify challenges, capacities, and legal requirements in this domain using thematic analysis and expert insights. The findings reveal that the current legal system in Iran faces structural weaknesses in addressing the complexities of international partnership contracts such as joint ventures and consortiums. The absence of clarity in obligations, lack of standard contractual templates, weaknesses in enforcement mechanisms, and inconsistencies in legal procedures have all created significant barriers to the effective implementation of such agreements.

In the initial stages of thematic analysis, primary codes such as ambiguity in defining responsibilities, lack of contractual models, absence of legal oversight institutions, conflicts between national regulations and international requirements, challenges in risk allocation, and weaknesses in dispute resolution mechanisms were identified. In subsequent analytical stages, these codes were grouped into twelve axial categories. Ultimately, these axial categories were consolidated into four overarching themes:

1. Legal and structural challenges,
2. Institutional and organizational requirements,
3. Gaps in contractual standardization, and
4. Absence of effective supervisory mechanisms.

This categorization highlights the multilayered nature of challenges in the field of partnership contracts and emphasizes the need for a comprehensive and systemic reform in the drafting and implementation of construction agreements.

The analysis further indicates that despite the willingness of executive institutions to adopt international partnership models, the necessary legal and technical foundations for aligning with such frameworks have not been adequately established. Expert interviews demonstrated that one of the core problems is the lack of a coordinated legal system consistent with international principles governing asset ownership, responsibility allocation, dispute resolution, and enforcement mechanisms. Additionally, many partnership contracts in the country continue to be drafted traditionally and without reference to international standards such as FIDIC, NEC, or UNIDROIT, resulting in significant ambiguities during execution. The lack of sufficient legal training for project managers and contract drafters was also identified as a contributing factor to these complications.

Another key outcome of this research is the recognition of the need to design an indigenous framework with international considerations for construction partnership contracts. Such a framework must align with the fundamental legal principles governing the country while remaining adaptable to international norms. It is recommended that a modular standard legal model be developed for drafting these types of agreements, incorporating specialized modules for defining obligations, allocating risks, establishing dispute-resolution mechanisms, outlining termination procedures, defining force majeure conditions, determining guarantees, and structuring ownership arrangements. Furthermore, the establishment of a specialized legal supervisory authority with sufficient powers to oversee and approve partnership contracts is essential for ensuring the proper implementation of this framework.

In conclusion, partnership contracts—particularly in advanced forms such as joint ventures and consortiums—hold significant potential for national infrastructure development. However, realizing this potential requires structural

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reforms in the legal system, development of standardized contractual frameworks, and establishment of specialized supervisory institutions. The findings of this study can serve as a foundation for improving policymaking, drafting specialized regulations, and providing legal training to enhance the quality of contract preparation and reduce risks arising from improper implementation. Additionally, this research provides a platform for further studies aimed at designing an integrated legal system for partnership-based construction contracts.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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