

# Effects of Negotiations about the Formation of Construction Consortium on Consortium Successful Performance in Iran's Construction Industry

Samira Kolbehdari<sup>1</sup>

PhD Candidate, Tarbiat Modares University, School of Architecture & Art,  
Tehran, Iran

Mohamad Hossein Sobhiyah

PhD, Tarbiat Modares University, School of Architecture & Art, Tehran,  
Iran

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## Abstract

Growth rate in the number of consortiums formed between Iranian contractors in the construction industry has increased during the recent decade. To enhance competitiveness and capacity, and to enter new markets, contractors in the construction industry develop different forms of consortiums. This case study which is done among the Iranian construction contracting firms centers on the issues involved in the first stage of the process of forming a consortium and agreement that must be negotiated between the partners. Results show that some of the key issues affecting the increase in the success rate of the consortium in the construction industry are identifying the objectives and scope of the consortium, clear definition of each stakeholder's duties, clarifying the financial rules governing the consortium, identifying the decision-makers, and the decision-making mechanisms in the consortium. Therefore, holding effective and efficient meetings at the first stage of the process of consortium formation and increased understanding of the key issues among the stakeholders has a significant effect on the success of consortium performance.

**Keywords:** Construction consortium, process of consortium formation, process of negotiations, description of the partners' duties, mutual trust

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<sup>1</sup> Corresponding author's email: [Skolbehdari@yahoo.com](mailto:Skolbehdari@yahoo.com) Tel: +989122499952

## Introduction

Today, in construction industry, special attention has been given to consortium and its role as one of the key factors in economic development. In general terms, development is a complex and structured process occurring in social, political and economic life of a society, developing it from the current condition to the desired condition. During the recent decade, in Iran, as a developing country, various forms of consortium have been formed among firms. Consortium is a flexible legal contract that can be used in the construction industry. Consortium can be designed differently according to a variety of objectives.

Any types of consortiums among several partners can be formed according to different objectives. Sometimes, the consortium is formed to implement a specific project that will be terminated with the completion of the project or it is formed as a long-term consortium among several partners to enhance their abilities for performing multiple projects (Girmscheid & Brockmann 2010).

Consortium, in any forms, has at least two levels: the consortium partners and the consortium itself. In this paper, the performance of the consortium as an integrated system will be investigated. Formed with any objectives, project development and completion in due time, cost and quality determined in the contract is a principle for partners.

The majority of literature on the consortium section is focused on manufacturing. Consortium theories have rarely been examined empirically in the construction industry and a small number of relevant studies are about risks of the consortium in construction (Bing & Tiong, 1999; Bing et al., 1999), factors influencing the consortium performance (Mohamed, 2003; Gale & Luo, 2004), benefits of the international construction consortiums (Badger & Mullign, 1995; Sillars & Kangari, 1997), and the sovereignty structure of the construction consortium (Ngowi, 2007; Chen, 2005). The initial examinations highlighted that due to complex and overlapping relationships among firms, having a comprehensive and clear contract, and monitoring key negotiations among partners are controversial issues in the successful management of the consortium. Thus, the main objective of this study is to identify the key issues that contribute to preparing a comprehensive contract for the consortium that must be negotiated among stakeholders in the early stages of the consortium formation. Observing these key issues will influence the increasing success of the consortium performance.

To achieve the aim of this study, the literature related to the type of consortium and its performance, and the negotiation issues were primarily studied. It was found that there is abundant literature on the types of consortium and characteristics of each type, whereas literature about manufacturing and the required negotiations in this industry is limited. Another challenge was the reevaluation of the findings and the current time theories used in this industry. Then, by holding meetings with experts in this industry and the case study of the construction consortiums formed in this area, issues that must be negotiated in the first phase of the process of consortium formation were identified. Key issues are presented at the end of this article.

## Background

### *The nature of consortium*

Consortiums are typically formed due to the implementation of large-scale projects that are too complex, like Siahbیشه and Seimareh dam and hydroelectric power stations which have been studied in this research. The types of participations discussed in the literature include: joint venture, strategic alliances, and consortium. Of them, joint venture and consortium are often short-term and are agreed among the partners for implementing specific projects. Although half of the consortiums are failed (Van Olderberg, 1995), the issue of consortium and its successful performance is addressed in this paper.

Joint venture is a specific type of long-term alliance among the partners which creates an exceptional opportunity for combining distinct merits and complementary resources. Joint venture is an opportunity to share the risks and costs in order to gain knowledge, to enter new markets, and economic saving (Contractor & Lorange, 1988).

A joint venture is formed from at least two firms that share their resources in a separate legal entity (Geringer, 1988). International joint venture is considered as a consortium in which at least one of the partners' office is outside the country of the operation site of the consortium (Geringer & Hebert, 1989). Many definitions have been provided for consortiums as follows.

Norwood and Mansfeld's (1999) definition of joint venture: it is a type of consortium defined as "The commercial agreement between two or more firms in order to allow greater ease of work and cooperation towards achieving a common aim, through the manipulation of the appropriate resources". In most studies, this agreement is remembered as a panacea for getting jobs and reducing the risks.

Much research is focused on international consortium due to the formation of a greater number of international consortiums (Llaneza & Garcia-Canal, 1998), but in this article, the indigenous consortium formed in the construction industry has been examined.

The term, consortium, is defined in various ways by different authors in order to cover a broad sense of agreement (Munnsa & Ramsay, 2000). In more extensive terms, this term can contain any type of trade agreement between the two sides because there should be a degree of mutual exploitation with a common goal between the parties. In order to specialize the term for the purpose of this article, especially in the context of Iran, five criteria including legal agreement, duration, share, partner, and benefit are used according to Herzfeld's (1989) and Munsa and Ramsay's (2000) work to define consortium. These criteria have been investigated in the contracts of consortiums used in this article.

- *Legal Agreement:* definition of a consortium can contain a wide range of legal agreements, from creating a distinct legal entity in one side of the spectrum to the informal and single-purpose cooperation on the other side. In this paper, the single-purpose legal agreement concluded to implement a particular project between the two firms is considered.

- *Duration:* Herzfeld (1989) made a distinction between consortium and joint venture. Joint venture defines a permanent organization providing long-term trade benefits in contrast to consortium which includes short-term agreements established to implement construction or engineering projects. This article covers the definition of consortium.

- *Shares:* The term consortium is associated with mutual cooperation. This concept refers to a degree of management sharing and the entity monitoring. In a situation where one partner dominates the agreement whether in terms of the monitoring share over the consortium or in terms of his property, there is a greater risk of failure for the consortium (Harrigan, 1988). In this case study, both partners have equal shares in the consortium ownership and risk.

- *Partners:* It is very common for a consortium to be formed from a group of partners. The key point in consortium understanding is that consortium is not the main activity of each of the partners. In this paper, the consortiums being examined are a part of the partners' activities.

- *Benefits:* Consortium is formed for business and making a profit for the shareholders. To enter a consortium, there are also other reasons that are represented in details as follows.

Due to the existing industries in Iran, during the recent decade, large consortiums have been formed. Among the existing types, both 'joint venture' and 'consortium' have received more reception in Iran. Biabangard (2000) separated two types of consortiums in Iran's law:

- Non-equity joint venture
- Equity joint venture

From his perspective, Non-equity joint venture is based on a two or multilateral contract between the members of a legal relationship. This type of consortium is usually used for a specific project or program, and with the completion of the given plan or project, the consortium will also come to its end automatically. This consortium is contractual in nature, and thus, the rules and general provisions of the contract's laws dominate the consortium so, it is necessary to include all the future circumstances in the contract. This contract is the basis of cooperation among the partners and no separate legal entity will be created. Each of the partners acts in the consortium according to the duties and roles specified in the contract. Each of them undertakes to carry out some parts of the work in which they have specialty. Payments are usually done in form of a joint account and its allocation is carried out in accordance with the conditions listed in the contract. Coordinator team often takes the role of liaison among the partners in this contract. This team is formed from the members participated in the consortium. From this perspective, "Non-equity joint venture" has the same meaning as 'consortium'.

From Biabangard's view (2000), disadvantages of contractual international trade consortium include the following:

1. Lack of legal personality
2. Impressionability of the trade consortium (financial, legal, bankruptcy) from the partners' situation
3. Interference with the duties and responsibilities

Biabangard (2000) defines equity joint venture as a consortium in which both parties establish a trade firm that has a legal personality independent from the partners' for achieving their goals and it is called a joint venture company. In this type of trade consortium, both parties' volition for cooperation is revealed in the framework of trade law.

In this type of consortium, the partners share their resources (such as the financial resources, personnel, management, equipment, etc.) in form of a separate entity for performing the projects. This entity follows the trade legal laws of the country. The responsibilities and roles are determined in this entity. A team is often formed as the consortium leadership. The team is often one of the partners or a separate entity including individuals as the representatives of the partners formed for this purpose. The firm, as an entity, is in charge of the employer. If a defect in the function or even in the structure of the organization (such as bankruptcy) of a partner occurs, the other partners will be charged to carry out the obligations of the firm completely.

Regarding the many benefits of consortium, Iranian firms have started forming consortiums to achieve these benefits and to attend the new markets. The encouragers for creating consortium in Iran can involve a wide range of factors including technology transfer, risk sharing, substructures, performing large-scale projects, overcoming trade barriers, and engagement in the supply chain.

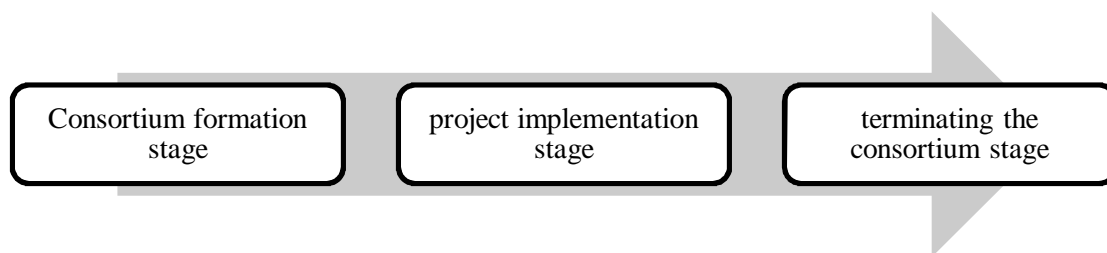


Figure 1: Life cycle of a consortium

The lifecycle shown in Figure 1 can be presented for implementing the construction consortium of large projects such as dam and hydroelectric power station of Siahbisheh and Simare. The first stage in the formation of a consortium can be considered as a project whose successful implementation depends on passing through different stages. In the process of consortium formation, five steps can be expected: 1) partner selection, preparing the consortium draft, and beginning the negotiations; 2) performing the initial feasibility studies of the project and their approval; 3) performing the initial feasibility studies of the consortium and their approval; 4) signing a cooperation agreement; and 5) approval of the final contract and registration of the issue (Lee & Ness, 1986). This process can sometimes take several years. Early stage in the process is to identify the potential partners and to negotiate them about the situation, and the key issues of the consortium. The focus of this

study is on the formation stage of the consortium and the first step in this cycle is shown in figure 2. The ultimate success of the project and creation a successful consortium affiliate depends on negotiation management and clarity in the final contract.

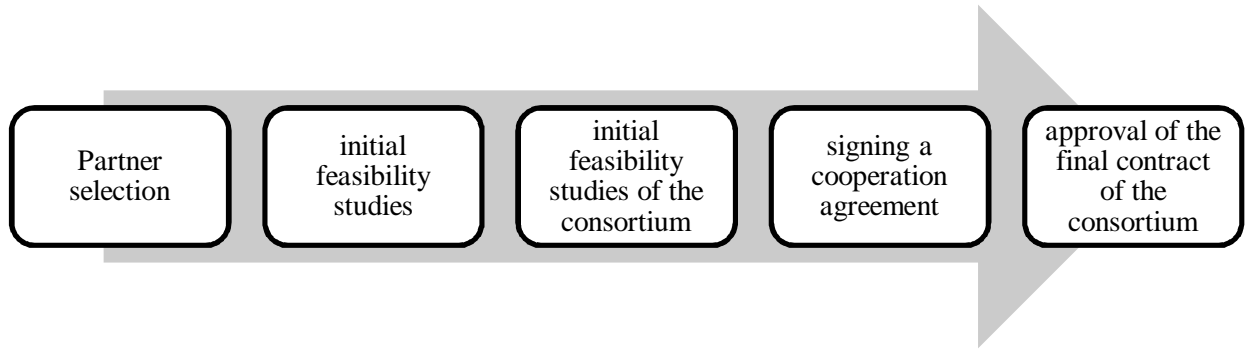


Figure 2: Stages of the formation of consortium

Consortium agreement determines the objectives of the consortium with respect to general conditions, the amount of stock, and the duration of the consortium. For example, in Figure 3 these joint ventures are shown for four firms from three countries (Girmscheid & Brockmann, 2010). Joint venture is governed by two contracts, each with a special type; first, the contract which specifies the internal relationships among the partners and second, the foreign contract with the employer which investigates the relationship between the consortium and the employer. The construction contract determines the duties, budgets, and the exact time of the construction (Hinze, 1993). In summary, it can be stated that the consortium has two sides: partners' firm and employer. This paper looks at the contractual relationships among the partners in the consortium and the first stage of its formation.

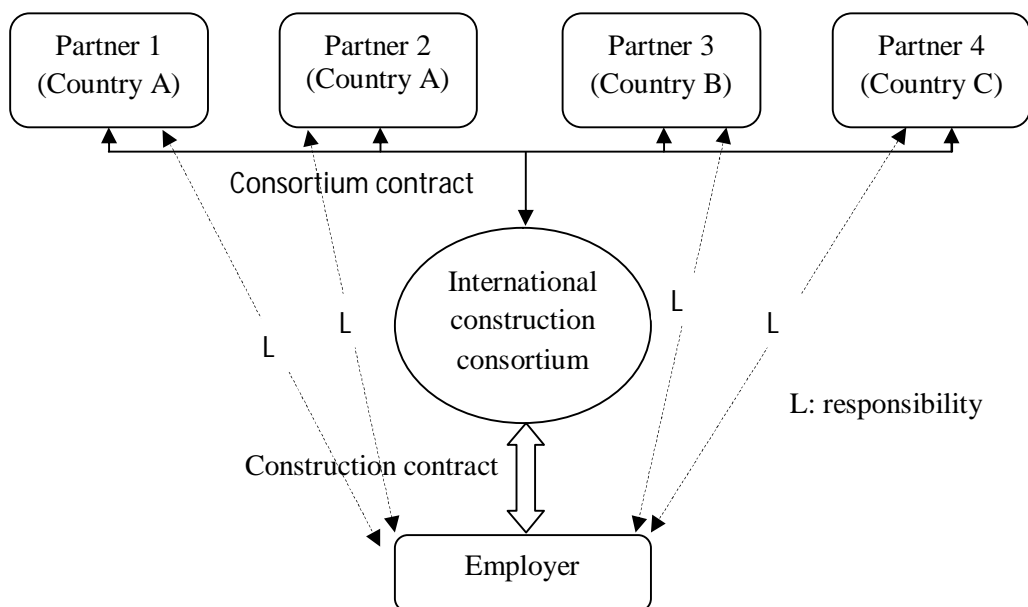


Figure 3: Contractual partnership



### *The concept of negotiation*

In today's highly changeable market, firms seek to increase the profits and benefits obtained from implementing various projects. One of the strategic methods for increasing the capabilities of firms is to use different types of consortium contracts either local and native or international and foreign. A pool of complex skills (e.g., marketing skills and R&D experts) is considered as key motivation for forming international consortiums (Pangarkar & Klein, 2004). Firms gain considerable benefits by entering into the consortium. Partners interact and affect each other.

Consortium management is very complex and difficult due to the existence of at least two firms with different management systems, philosophies, values, and views, which can be both each other's competitor and collaborator (Tatoglu & Glaister, 1998).

Negotiations for creating values are twofold. The principle of consortium formation is based on the expectations of the partners in creating values. Therefore, the first planning issue begins with a question about creation of values from the firms intended to form a consortium. As a potential partner for the consortium, is there a twofold value production which protects and respects partners' objectives? The consortium partners rarely have the same strategic objectives and their views in creating the value is probably different. However, this requirement does not continue after the partners comprehend each other's objectives (Andrew & Kou-qing, 1999).

In negotiations, a firm should seek for maximizing its benefits. But during the life cycle of the consortium, the partners' benefits depend on creating values in the firm. So, the negotiations are not only the process of "exchanging" values for both sides but also they are related to the process of "producing" values. If a partner doesn't create value in the consortium, he actually does not have anything to share.

When firms decide to initiate discussions related to the formation of a consortium, the negotiations are done based on the primary relationship that exists between the firms. Previous cooperation between the partners of the consortium can provide the initial mutual trust. If firms have already worked together, they partly have a clear understanding of each other's skills, abilities, and commitment to each other's agreements. Ultimately, the success of the project and the consortium depends on the appropriate management of the negotiation process.

When the partners involved were selected, the negotiation process focuses on some key issues pertaining to senior directors' decision-making (Munnsa & Ramsay, 2000). Some of the issues that need to be negotiated at each consortium are presented below.

1. What is the purpose and scope of the consortium? The overall objectives of the consortium should be clear. The main activities of the project for implementation, resources and the required technology in addition to schedule, cost, etc. must be defined.

2. What is the legal form of the consortium? The nature of the contract and agreement between the partners should be determined. An agreement should be made between the partners concerning legal issues, such as the law governing the consortium.

3. What is the contribution of financial discipline of the consortium? Allocation of shares in the consortium, degree of each partner's participation, profit sharing contributions, tax and accounting processes should be specified.

4. How is the consortium managed? Establishing an appropriate management structure and organization for project control is very important. The process of reporting and monitoring the consortium to inform the partners of the project's condition and its development, and a way to achieve the project objectives should be set.

5. What is the expected life span of the consortium? The duration of the relationship between the partners and the dissolution terms should be specified.

6. In order to dissolve the consortium, what process should the partners follow? This process should be specified clearly in the negotiations in the first stage of the process of consortium formation.

A consortium can be a complex time-consuming process. Negotiation is a process that can be done at different intervals during the consortium formation, and is not an instantaneous event or decision. While negotiating, different activities and issues are exchanged between the partners. These interactions can lead to different events and decisions. These conditions are of high importance specifically when the partners' technology, cultural and economic systems are different. During the negotiation process, as information is exchanged between the partners, knowledge develops. As Munis (1995) states, the context and the relationship between the partners during the negotiation process depends on the willingness of the parties to share information and knowledge. When this does not occur, the trust between the partners reduces, and the possibility of failure increases. Literature review of the key issues affecting the consortium from Nair and Stafford (1998) specifies other factors involved in the negotiation process that must carefully be studied.

- Identifying the decision-makers: building confidence on the authorities of any of the decision makers and clarifying it during the negotiation process.

- Building trust: trust is the one of the prerequisites for a successful business.

- Overcoming barriers of speech: presence of people familiar with the language and culture of the parties (in international consortiums) during the negotiation process.

- Managing the cultural differences of a business: respect for culture and business of the consortium parties.

- Negotiation about the distribution of resources: identifying the contribution and economic value of each party



- Negotiation about monitoring the consortium: clarifying the policies and the process of monitoring the consortium
- Bargaining about the exports: clarifying the way the produced products are exported in the consortium
- Addressing the legal and copyright issues: respect for intellectual property in the consortium can create long-term relationships between the parties.
- Putting an end to all the issues: investigating and discussing all the issues encountered during the negotiation process and responding them.
- Using professional negotiators: facilitating the negotiation process and creating long-term relationships based on "win-win" perspective.
- Effective use of consultants
- Promoting teamwork: collaboration can be beneficial in the life span of negotiation processes for the parties involved.
- Application of endurance and flexibility: negotiations can progress quickly or take many months or even years.

### *Performance of consortium*

Many initial empirical studies considered the consortium performance based on financial indices and different purposes, such as exploitation, growth and opportunity cost, durability, duration, instability in ownership, and renegotiation of contract. In other studies like that of Anderson and Weitz (1989), not only a bond is made between performance and duration but also, it includes the motivations present in the formation of consortiums. As Grainger and Hebert (1991) raise, despite poor financial results, a consortium may meet the partners' goals, and thus, be considered as successful by one or all the partners. Having this point in mind, a consortium may be considered as unsuccessful while having strong financial results and good stability.

Based on Nielsen's (2007) studies, organizational collaboration, especially among local boundaries, continually alters over time. It is important to make a distinction between the factors related to the performance at the beginning of international consortium, and the determinant factors of constant development of performance in relationships. Consequently, determining the consortium performance falls into two categories.

1. Factors before the consortium formation
2. Factors after the consortium formation

Factors before the consortium formation point to dependent variables related to the time before the formation of the consortium and the partner selection process. When the consortium is formed, factors after the consortium formation determine the consortium performance. The aim of this study is to investigate the effect of negotiations between the

partners involved in the first stage of the process of consortium formation on the successful performance of the consortium.

## Methods

In this paper, the theory expressed in this area is evaluated in light of the facts, and then, factors affecting the performance of consortium in the construction industry are identified. Through a case study in Iran's manufacturing industry, the present study attempts to show the key issues that must be agreed between the partners in the first stage of consortium formation. In this case study, these key issues have been compared, and the reasons for their conformity or non-conformity with the existing literature have been expressed. To answer the question addressed in this paper, twenty contracting firms in the manufacturing industry, such as "Farab Construction Company" and "Tabelie Construction Company" have been studied. Each of the twenty firms has very successful projects in their resume. The consortium of Siahbishe and Seimare dam and hydroelectric power station projects concluded between the two firms in order to increase throughput and capacity has been examined as a major case study in this study.

In this paper, this case study is considered as a research method. The results of the questionnaire were used to develop the generalizability of the findings. Considering the fact that a consortium forms between the parties with respect to the decisions of the organization's top directors, and the data collected from lower-level directors may bring confusion in the results, the statistical population of the questionnaire's distribution involved 131 senior director in the aforementioned firms from which a total of 105 responses were collected. The senior directors including the managing director, planning and development deputy of the managing director, executive, director of contracts, program management, executive advisor, etc. were key stakeholders in the organization and had at least 15 to 20 years of relevant work experience, and were willing to participate.

Due to the fact that the questions are qualitative, the Likert scale was used to turn the questions to quantitative ones so the results can be analysed. Cronbach's alpha was used to determine the validity of the questionnaire. Cronbach's alpha is a coefficient which reflects the positive correlation between members of a set. Cronbach's alpha is measured based on the internal average between questions pertaining to a single concept, and the closer it is to number one, the more reliable is the internal consistency. Cronbach's alpha of the questionnaire was 0.83 (Coefficients above 0.70 are appropriate and acceptable).

Logic of TOPSIS was used to analyse the results. The term TOPSIS stands for Technique for Order Preference by Similarity to Ideal Solution meaning that the preferred methods are based on their similarity to an ideal solution. This method was first introduced by Hwang and Yoon (1981). In this method, M options are evaluated by N indices. Each question can be considered as a geometric system consisting of M point in an N-dimensional space. TOPSIS method is based on the assumption that the selected option should have the minimum distance with the positive ideal solution (best-case or A+) and the maximum distance with the negative ideal solution (worst-case or A-). It is assumed that the utility of each indicator has been steadily increasing or decreasing. Using the logic of TOPSIS, the factors have been prioritized and the results have been presented.

## Results

By investigating the consortium contracts such as the dam and hydroelectric power station of Siabshih and Seimareh's construction projects between Farab and Tablieh's in Iran's construction industry, and after holding the meetings with the experts in this industry, the discussions that should reach on an agreement among the partners before entering into the consortium were identified and summarized in Table 1. These factors are the most important issues from experts' views of this industry and should be referred to in the negotiation meetings.

Table 1 Factors affecting the successful performance of the consortium (case study)

No.	Effective Factors (Case Study)
1	Defining objectives and the scope of the consortium limit
2	Indicating the financial rules governing the consortium
3	Determining the decision makers and the decision making mechanisms
4	Establishing a mutual trust
5	Overcoming the barriers of speech (in international participations)
6	managing the cultural differences of business
7	Negotiation about the distribution of resources in the consortium (human resource, machinery, equipment)
8	Negotiation about the control and management of the consortium (Steering Committee)
9	Bargaining about the exports (in specific projects)
10	Dealing with legal and copyright issues (Ownership of the project's achievements)
11	Promoting the culture of group and team work
12	Promoting the culture of strength and flexibility
13	Creating the structure of an identical system (financial, commercial, human resources)
14	Complete identification of the project and the governing restrictions
15	Clear definition of the partners' duties
16	Defining the realm of authority of each of the key individuals in the project
17	Negotiation about resolving disagreement mechanisms and the legal authorities governing the contract
18	Effective use of external or internal consultants

Table 2 presents the results of this case study and those of the literature.

Table 2 Comparison of factors affecting the successful performance of the consortium  
 (literature and case study)

No.	Effective Factors (Case Study)	Literature
1	Defining objectives and the scope of the consortium	Defining objectives and the scope of the consortium
2	Indicating the financial rules governing the consortium	Indicating the financial rules governing the consortium
3	Determining the decision makers and the decision making mechanisms	Determining the decision makers
4	Establishing a mutual trust	Establishing trust
5	Overcoming the barriers of speech (in international participations)	Overcoming the barriers of speech
6	Managing the cultural differences of business	Managing the cultural differences of business
7	Negotiation about the distribution of resources in the consortium (human resource, machinery, equipment)	Negotiation about the distribution of resources in the consortium
8	Negotiation about the control and management of the consortium (Steering Committee)	Negotiation about the control and management of the consortium (Steering Committee)
9	Bargaining about the exports (in specific projects)	Bargaining about the exports (in specific projects)
10	Dealing with legal and copyright issues (Ownership of the project's achievements)	Dealing with legal and copyright issues (Ownership of the project's achievements)
11	Promoting the culture of group and team work	Promoting the culture of group and team work
12	Promoting the culture of strength and flexibility	Promoting the culture of strength and flexibility
13	Creating the structure of an identical system (financial, commercial, human resources)	
14	Complete identification of the project and the governing restrictions	
15	Clear definition of the partners' duties	
16	Defining the realm of authority of each of the key individuals in the project	
17	Negotiation about resolving disagreement mechanisms and the legal authorities governing the contract	
18	Effective use of external or internal consultants	

As can be seen in the table, more factors have been identified in the consortiums of Iran's construction industry which can influence the successful performance of the consortium. The identified factors are mostly placed in the area of drafting the consortium

contracts, and should be referred to in the contract comprehensively and clearly so the partners can reach an agreement upon it.

Factors listed in Table 1 are collected based on the questionnaire distributed among senior directors and the results have been prioritized by TOPSIS logic. The results can be seen in Table 3. The table has been drawn according to the weights provided by the software. Generally, it should be noted that the formulation of a comprehensive and clear contract has a significant effect on the success of the consortium. According to what mentioned above, before entering the consortium and concluding a contract, the partners should clarify issues such as the scope and objectives of the consortium, description of partners' duties, financial rules governing the consortium, and similar cases. The degrees of clarity in key issues have a direct impact on successful performance of the consortium in Iran's construction industry.

Table 3 Priority of the factors affecting the successful performance of the Consortium in Iran

No.	Effective factors (Case study)	Weight
1	Objectives and scope of the consortium	0.592
2	Clear definition of the partners' duties	0.560
3	Indicating the financial rules governing the consortium	0.536
4	Determining the decision makers and the mechanism of decision making	0.530
5	Defining the area of authority of each of the key individuals in the project	0.523
6	Negotiation about controlling and managing the consortium (Steering Committee)	0.508
7	Establishing a mutual trust	0.507
8	Negotiation about the distribution of resources in the consortium (human resources, machinery, equipment)	0.504
9	Negotiation about resolving disagreement mechanisms and the legal authorities governing the contract	0.503
10	Complete identification of the project and the governing restrictions	0.503
11	Creating the structure of an identical system (financial, commercial, human resources)	0.500
12	Overcoming the barriers of speech (in international consortiums)	0.500
13	Promoting the culture of strength and flexibility	0.499
14	Dealing with legal and copyright issues (Ownership of the project achievements)	0.497
15	Managing the cultural differences of business	0.496
16	Promoting the culture of group and teamwork	0.494
17	Effective use of external or internal consultants	0.492
18	Bargaining about the export (in specific projects)	0.491

Based on the obtained results and the proximity of weights to each other, it can be concluded that regarding the importance of consortium issue in Iran's construction industry, clarity of all the stated issues, integrity in contract, identifying all the required cases, and creating an agreement among the consortium partners have roughly the same importance, and for the success of the consortium performance, all the issues stated in the table should be negotiated and referred to in the contract. Graphical representation of the results can be seen in Figure 4.

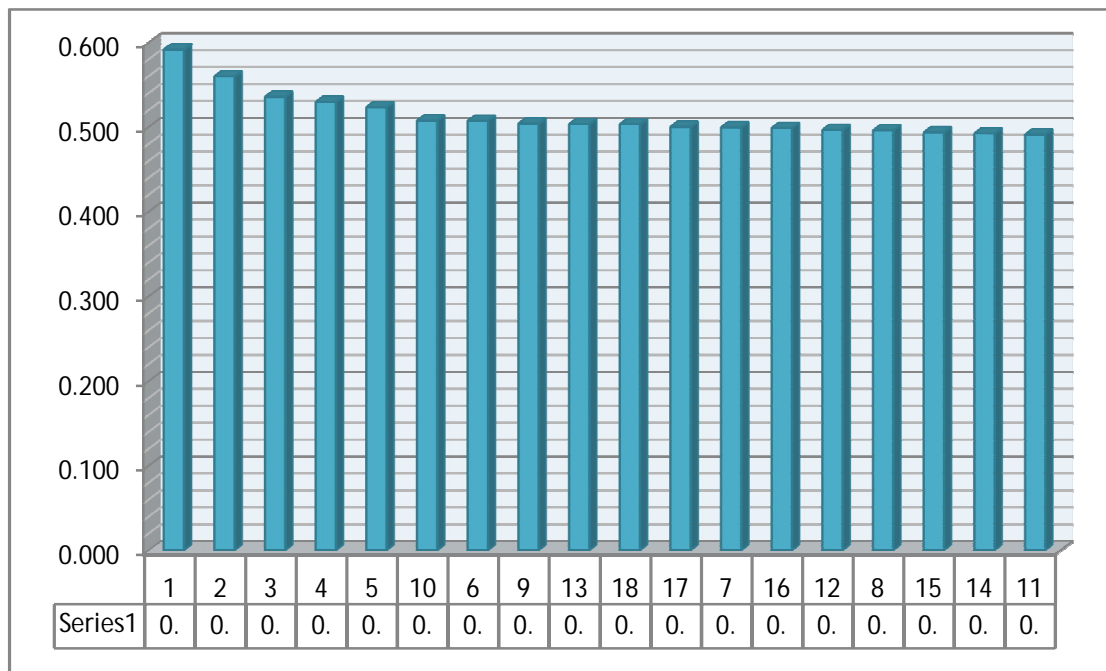


Figure 4 Priority of the effective factors on the successful performance of the Consortium in Iran



In large projects, due to the complexity of the tasks, the description of the duties of each member and the common occupational sections among the members may not be stated clearly at the beginning of the task and this issue can confront the success of a consortium with serious challenges while performing the task. Writing the list of all common occupational sections, the matrix of labour division among the members, and complete coordination of the members with each other are requirements of a successful consortium. This ranking indicates that factors relating to contract and its clarity are of the highest importance before entering into a consortium, so the partners should allocate a considerable time to holding effective and efficient meetings to deal with this issue.

## **Discussion and Conclusion**

Firms can develop their business opportunities by forming different types of consortiums. Numerous articles have been written in this area with growing number of cooperation contracts under the subject of consortiums among firms. However, few studies have evaluated the impact of negotiations in the process of consortium formation on the successful performance of the consortium. Consortium negotiations can be complex and time consuming. The consortium will be ended if the partners agree on the negotiation issues before entering it. The findings of this study are important for the future examination of issues related to a consortium. The factors identified are used to enhance the probability of the consortium success.

One of the important issues in consortium contracts is the complexity of allocating and describing duty among the partners. Holding negotiation meetings in the first stage of the consortium formation has a special role in reducing this complexity, increasing clarity, and enhancing the success of the consortium performance.

A questionnaire was distributed among experts in cooperating firms involved in the consortium such as two projects of Seimare and Siahbishe's dam and power station. Data were analyzed by the logic of TOPSIS to identify the most important issues.

The end result of the negotiation process is to achieve mutual goals among partners. Establishing clear objectives even in the same cultures is very difficult. Negotiations can succeed or fail. Partners involved in the negotiation process can reduce the possibility of their failure in the implementation of the project by determining their needs for entering a consortium, determining clear objectives, formulating a comprehensive contract, and also problem management at the time of occurrence.

Successful management of a consortium is identifiable in Seimare and Siahbishe's projects. Despite many difficulties, all the key issues that must have been agreed among the partners are well managed in these two projects and conflicts have been at the lowest possible level.

Consortium performance can be successful in Iran's construction industry if the partners agree upon issues such as consortium objectives, its legal form, financial issues governing it, management and control, time duration, and its dissolution processes.

Negotiation process can eliminate the uncertainties existed among partners at the beginning of the consortium entrance and guide partners to build a successful consortium. Establishing mutual trust between senior directors in partners' organization is one of the critical issues for successful promotion of this process and accurate exchange of information between the partners.

The results of this study also showed that clarity in drafting the contract between the partners has a great impact on the success of the consortium performance in Iran's construction industry. Before entering into a consortium, partners should identify the objectives and the scope of the project for which the consortium has been formed. To avoid interference in the activities of each of the partners in the consortium and reworking, clear and comprehensive description of each of the partners' duties should be prepared. The aim of the project is to gain advantage and to increase profit for the shareholders. Financial rules governing the consortium and techniques of profit and loss distribution are other issues upon which the partners should reach an agreement in meetings before entering the consortium. The fourth issue to be discussed in meetings is to determine the decision makers and mechanisms of decision making during the implementation of the project. Due to the proximity of the rank and weight of each of the factors, other issues are also considered as important so, it is recommended to determine and negotiate them to enhance the probability of success in consortium performance. In fact, by understanding these issues, it is possible for directors to discover new opportunities and to create appropriate situations that lead to increase in the consortium success for implementing large-scale projects.

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