

*Original Research Article*

# Impact of Governance and its Consequences on mega multi-firm projects in Iranian oil consortiums

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## Abstract

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The system of governance in megaprojects implements a variety of companies under the consortium agreement and can affect the performance and success of the consortium. By paying attention to the literature review and results related to this issue, it is obvious that the key factors for the success of consortium are factors and components affecting governance system. The aim of this paper is to determine the impact of governance on mega multi-firm projects and its existing consequences. By using the qualitative and exploratory research method, six upstream consortiums of South Pars investigated and grounded theory used to analyze the data and find the relationships between them. The components of existing governance, as a result of process characteristics and mechanisms, as well as influential factors, identified in three categories: causative, interferential, and ruling conditions and the consequences of existing governance identified; at the end, the model of how governance influenced and its implications designed and the theory built.

**Keywords:** Governance system, Factors affecting consortium, Governance consequences, Consortium, Megaprojects

## INTRODUCTION

Today's organizations, by knowing the possibilities and constraints, choose a cooperative approach with other companies and organizations in order to achieve their long-term goals and plans. This collaborative approach becomes a growth and development path for most companies (Tsang, 1998). Partnerships help partners to learn from each other the technology, skills and knowledge that they do not have in their organization (Chen, 2007). In order to numerous benefits, Partnerships are a used form in all part of the world as well as in Iran in recent decades. Projects in mega scale as an active network of organizations merge their resources, abilities and knowledge to meet the needs of the clients.

Because of complexity of the partnerships, management is much more difficult than ordinary projects

run by a single company. Inefficient coordination, control and management of these partnerships lead to weaken performance at the project level and partnerships. The governance of consortium in order to manage the relationships between partners is one of the factors affecting the performance of the consortium (Ho et al., 2009). By revising the literature review one can find lots of evidence related to consortium, which suggests that governance and management are very important in describing the performance of it. The desirable performance of the partner company requires a project control system that allocates appropriate control power to the partners, so the partners can transfer their company's specific benefits to the consortium (Beamish, 2008; Yan and Gray, 1994). Organizations goal is achieving project success and multilateral interests of all partners in

consortium. By considering Iran as a developing country with a state-owned economy and looks for foreign investment, the formation of consortiums can be used as an economic solution to attract domestic and foreign capital. Consortiums are also a powerful tool for achieving knowledge and learning from partners, especially foreign partners. Extensive literature on the concept of governance, good governance and project governance presented (Muller, 2009); But as it expressed in literature review, the notion of governance in consortium megaprojects dimly measured. In this research, in regards to the importance of South Pars field development projects (upstream of Iran's oil and gas industry), and using the empirical data obtained from the case study, this paper's aim is finding a proper answer: "What are the factors that affect the Governance of mega multi-firm projects in a consortium?". Therefore, in order to clarify the concept of the research study, literature reviews relate to consortium, government and governance surveyed. Then methodology, data collection method and analysis of the results are stated. Finally, we will discuss the relationship between the results with the conclusions and suggestions for future research.

## Literature Review

A megaproject defined as a complex and well-known project that has a huge impact on the economy, society and surrounding environment (Xie. et al, 2011). From capka's View point (2004) expensive projects that require the management of numerous and complicated activities simultaneously with the correct management of time and cost called "mega" projects. The most comprehensive definition presented by Xie et al. (2011) in a mega project that categorized projects by using two complexity and size features. According to their definitions, a mega project involves countless parallel activities, limited resources, precise timelines, and numerous decision-makers, with two important features: large scale and complexity; they have a large area to carry out and complete within a long period of time. By using the consortium project implementation method, the complexity and size of the project increase and highlight need to clarify the governance system and its components in these projects. The weak performance of each partner can lead to the dissolution of consortium and failure in the implementation of the project (Bitran et al, 2002)

As stated in the literature review, the general characteristics of the project include its temporary nature, uniqueness and complexity (Mandják and Veres, 1998) and also the general features of the project, a particular industrial platform, can affect the governance of mega projects. Besides, the specific conditions of a project can

also lead to factors which affect its governance (Orr and Scott, 2008).

The term "governance" as one of the key factors contributing to the success of the consortium requires more transparency. This word derives from the Latin word "*gubernare*" means guiding. While describing the notion of government in countries, it is now synonymous with the concept of good governance in companies and organizations (Muller, 2009). At the macro level, good governance's goal is changing the perspective and methodology of building society, and consequently, at the micro level, there are individual and corporate changes in performance. At micro level, good governance interests include optimizing investment, avoiding common reasons for failure, motivating employees through better communication, reducing risk and increasing profitability (PMBOK, 2013). In Yang's sight (2016), good corporate governance includes principles and implementation, so principles include credibility, transparency, justice, electoral method and long-term vision. The main purpose of the corporate governance law is "transparency and accountability," and the benefits of the rule of law include: transparency of information, observance of equity rights, the establishment of internal control systems and the promotion of stakeholder relations with the company (Herman, et al, 2015). Crawford et al. (2005) recognized the importance of effective project management governance within the corporate governance framework for organizations. They considered projects and plans as a tool for implementing corporate strategies and provides visibility and transparent control over the company's non-routine operations and capabilities.

Turner (2008) identified three levels of governance in project-based organizations: The first level, the board of directors and their interests expresses in the project. The second one which describes the appropriate organizational infrastructure to perform the project efficiently and ensuring the proper capabilities for the successful delivery of the project in the organization and also the projects are done correctly and the third one related to each project alone, a temporary organization that needs to be governed. The first level concerns about the interests of the board of directors of the organization in the project and is the key element of governance. The second level is the project management governance and the third level is project governance.

As stated, the Mentioned categories are for the implementation of a project by a single company, Winch's research (2006) is one of the earliest one on the governance of projects that implemented by several organizations dealing with mega projects involving multiple companies, and emphasizes the importance of mega projects as interim organizations that involve multiple actors, and interconnected through inter-organizational relationships. According to Xi et al. findings (2011), inefficient governance processes in the

project planning phase, inefficient decision-making structure for owners in the governance, and lack of partnerships in the implementation phase, along with other factors, are due to poor performance of consortium mega projects.

According to Ho et al. (2009), in the context of the governance structure of consortium projects, in the manufacturing industry, two governance structures identified: 1) Jointly managed joint ventures 2) Separately managed joint ventures. The characteristics of the jointly managed JVs are as follows: 1) all partners share the risk of participation and profit in accordance with the agreed ratio. 2). The consortium management team makes important decisions to be followed by all stakeholders. 3) The need for cooperation and communication at all levels of the partnership organization is developing. The characteristics of the separately managed JVs are as follows: 1) each of the partners is financially and technically responsible for their assigned tasks, which often negotiated. 2) Each partner will take decisions on their assigned tasks, regardless of the consent of other partners. 3) The need for co-operation and communication limit to high-level managers and minimize at the level of individuals.

In their view points, the governance structure of partnerships is between these two spectra and there are components and factors affecting the choice of each of these structures, including the difference in organizational culture, trust, learning motivation and the need for logistics. Lin et al. (2013) analyzed the model of Ho et al. (2009) and suggested that jointly managed JVs was a more appropriate choice for the governance structure of consortium and indicated that other important components and factors in choosing governance structure affected Which is not mentioning in the studies by Ho et al. (2009) and can make a difference in research findings.

Traditionally, the success of the project measured on the basis of the threefold time, cost, and performance scales, and considered a successful timeframe, which estimated in the budget and the predetermined timetable framework and completed by the function for which it designed (Sylvester and Abdul Rani, 2010). By understanding that the success of a project is multifaceted, the questions raise about which different input factors have different effects on the outputs of the project (Yuang, 2008)

Results reveal that there is little research in this area and more focus is on the concepts of corporate governance and project governance, and the impact of different factors on their performance in the project context. This research attempts to clarify the concept of governance in the context of consortium, its influential factors and finally consequences of existing governance present.

## METHODOLOGY

This study is based on the use of qualitative approach and placed in the interpretive paradigm. Data was first collected, then the propositions built based on them and finally, the theory designed based on these propositions. The research strategy is the multi-case; we do not intend to evaluate pre-existing propositions; the reviewing process leads to the "principles and generalizations". Data analysis did by grounded theory, which is a process-driven method, and it is possible to examine and modify a phenomenon over time and in 1967, Glazer and Strauss introduced it in a book entitled "The Discovery of Grounded Theory: Strategies for Qualitative". In this research, we do not interfere with our mental assumptions in the theory, since initially do not choose a hypothesis to seek to reject or prove it (Walker, Myrick, 2006). During the interviews, the theory that formed in our mind is continually compared with the opinion of the experts, so it can be more credible and claim that this method presents a more appropriate model (Glaser, Strauss, 1967). In the grounded theory analysis, the data coded in three steps (open, Selective, and axial coding). During these three stages, and by encoding the data, the codes gradually lead to concepts; the concepts lead to categories; and ultimately the theory presents.

Six consortiums in Iranian South Pars phases investigated in this study. The findings from deep and structured interviews analyzed using the above coding. The components of existing governance as well as the factors influencing it and the consequences of this existing governance identified. The methodology used in this study requires that information be obtained from experts and specialists. The criteria for choosing experts are theoretical mastery, practical experience, the willingness and ability to participate in research and access to them. The interviewees are in the top-level of organizations that have the expertise and experience they need. 31 people selected by snowball technique (Bakker et al, 2010). Individuals in partner companies (contractors and clients) play a key role. Interviews with these people continued to reach theoretical saturation. To reach this goal, the process steps of the present research present below. (Figure 1)

The steps to analyze the research data and its results present in the next section.

## RESULTS

In the first stage of the case study, by examining the structure of the six South Pars development phases, a form consisting of the client and other partners involved in the formation of the consortium can be drawn. In total, South Pars has 50% of Iran's gas reserves and 8% of

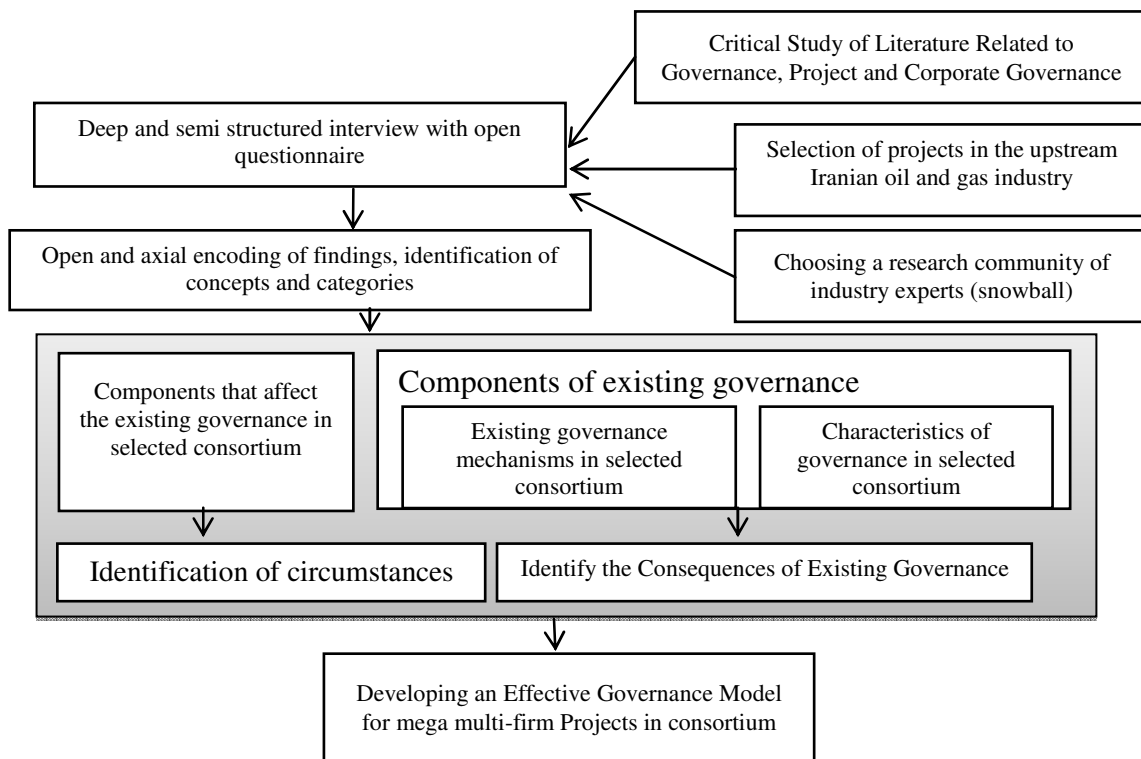


Figure 1. Processes of Research

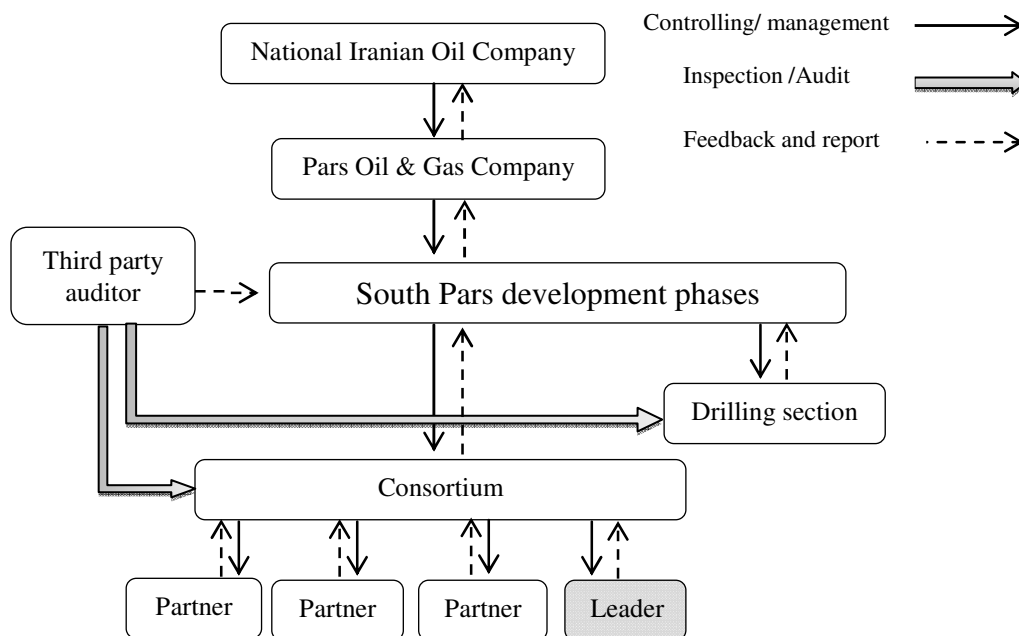


Figure 2. Relations between parties of South Pars development phases

world reserve, but since it has only 3700 square kilometers in Iran, from this vast reservoir, 14 billion cubic meters of in place gas, 10 billion cubic meters of extract gas, and 17 billion barrels of condensate gas belongs to

Iran. Therefore, the projects formed in this industry are great importance for the country and are the basis for the present study. (Figure 2)

Pars Oil and Gas Company, one of the subsidiaries of

**Table 1.** Factors and Components Affecting Governance

category	Sub category	concept
External circumstances	Oil industry	Competition in exploiting shared resources
		Government dependence on the income of the oil industry
	Inability of parts of consortium	Foreign investor demand in oil industry
		Partners Capabilities
		Partners Commitment
		Experience, knowledge and expertise of partners
		Leader's capability
	Selection of partners / competition	client's Obligation
	Transparency of contract	Competitive Tenders
		Ambiguity in the contract
		Contract engineering
Internal circumstances	Accountability	Transparency of roles, responsibilities and authority
		Transparency, timing and structure of reporting
		Continuous communication between parties
		Transparency between responsibility, authority and decision making sources
	Increase time / cost / claim	Resolving conflicts
		Decision-making with knowledge, expertise and lessons learned
		Use of contract provisions
	Weak guarantee during exploitation	Manage overlays
		Requirement to use inside procurements
		Impact of Policy on Project Procurement guarantee during the operation period
		Capabilities of domestic manufacturers
		Knowledge and learning infrastructure in partners organization
	Lack of project progress based on schedule	Partners commitment to track project and allocate resources
Pressure tools for progress (except for financial resources)		
Transparency of partners goals		
Providing benefits of parts of consortium	Planned infrastructure in achieving goals	
	Monitoring and controlling project in accordance with interests of partners	
	Internal and external inspection on project	
Terms governing the Consortium	Country conditions	Political conditions
		Market conditions and business environment
		Economic conditions
		Cultural conditions
		Environmental conditions
		Social conditions
conditions of intervention	shareholders	Direct impact of client on project
		Partners Impact
		Leaders Impact on Project
	stakeholders	Expectations and goals of project shareholders
		Expectations of project stakeholders
	Legal orders	Needs and expectation of stakeholders
		Direct orders from stakeholders
		Legal requirements affecting project

Table 2. Continue

	Requirements imposed on project (upstream)
	Legal orders of executive bodies
	Legal orders of policy makers
Third Party Interference	Opponents in the scope of project
	Union and Guilds

Table 2. The Consequences of Existing Governance

The Consequences of Existing Governance	
category	Concept
direct involvement of the client due to the inability of parts	Direct referral of partners' problems to client
	Direct financial management by client
	Direct client involvement in decision making
	Direct client supervision on parties
	Increased dependence on supervisory organization
Failure to follow the rules of consortium	Non-commitment to responsibility
	Failure to comply with rules and regulations
	Relocation of partner managers at different levels (in short time)
Inappropriate selection of consortium parts	Choosing partners without regard to knowledge and expertise required
	Leader Selection for political reasons of country
	Choosing partners without regard to capital and financial backing
	Choosing partners without regard to previous background history
Lack of accountability and monitoring structure and mechanism	Mismatched level of authority and resources for decision making
	Non-responsiveness of partner managers due to lack of job affiliation
	Continuous change of people in structure of partners company and change the way of management
Failure to follow the decision making process	Failure to respond to the consequences of a decision
	Announcing the final opinion by leader in decision making
	Direct involvement of leader in final decision
	Impact of the country's political decisions on decision making
Decision making without the necessary background and knowledge	Third-party involvement due to lack of partners trust
	Use comments without necessary knowledge
	Increase time and cost due to incorrect and incomplete decisions
Repeat continuous mistakes and increase duplication	Lack of consensus among partners in key points of progress
	Failure to delegate authority to managers
	Repeat the same mistake in all phases
	Repeat mistake of previous phase due to the completion of maps
Improper knowledge and learning management	Incomplete contract due to incomplete contract provisions
	Repeat mistakes due to lack of a mechanism for recording lessons learned
	Failure to transfer knowledge of "Use of processes" among partners
	Losing a person's experience by leaving organization
priority of individual goals on the collective goals	Increase the cost of training a new person
	The presence of people without necessary expertise in key points
	Lack of knowledge and ability to manage things
	Lack of transparency of goals and the way to achieve it

Table 2. Continue

	Diversion of project progression to achieve personal goals
	Focus on personal goals in decision making
Lack of monitoring and inspection mechanism	Lack of a proper mechanism for payment of damages due to the delay of partners
	Lack of proper mechanism to push partners to progress
	Increase time due to late misunderstanding
Failure to follow ethics by the inspector	Lack of motivation mechanism within each organization
	Sending Inspector's Inaccurate Reports to client
	Failure to submit proper reports due to bribery
Improper management of procurement	The inspector is contractor's interest, covering errors
	Increasing the cost of inadequate procurements
	Purchase logistics from out-of-list manufacturers, without obtaining a necessary license beforehand
	Short-term procurement guarantee
	Late Order Goods and Equipment (Rising Price)
	Defective logistics after guarantee period

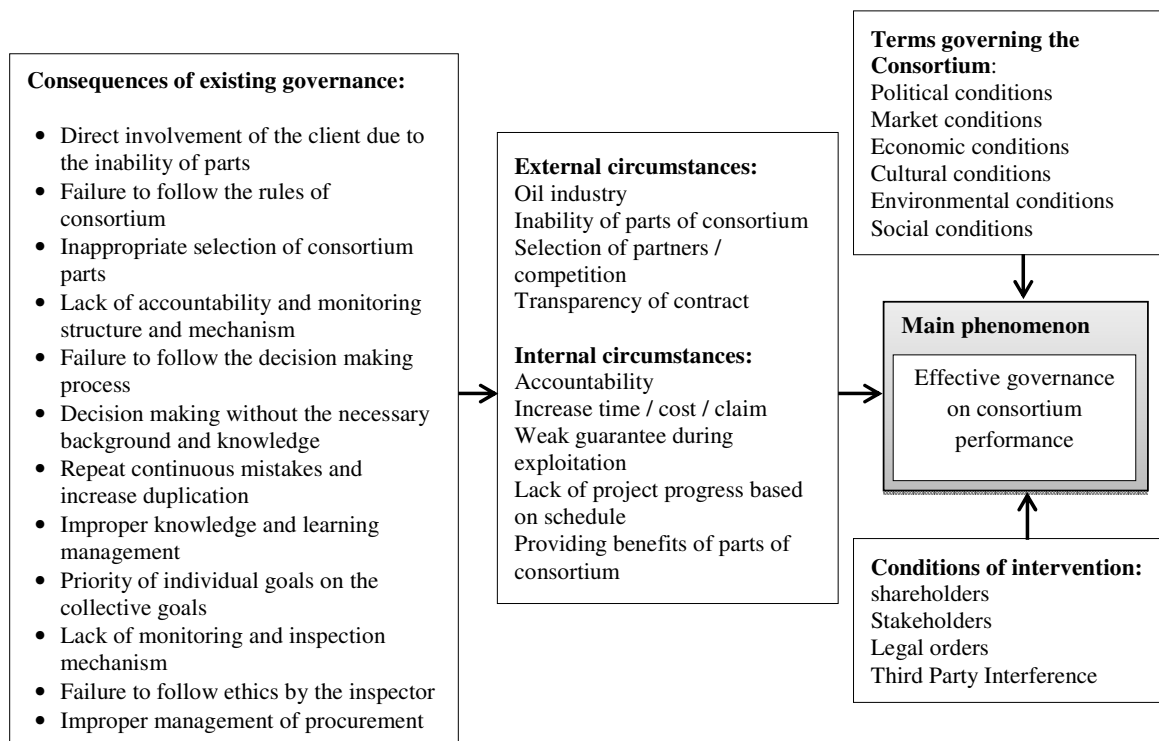


Figure 3. Theoretical Model of Effective Factors on "Effective Governance on consortium Performance"

the National Iranian Oil Company, established on December 1, 1998. This company is responsible for the development of all phases of the South Pars gas field and considered as a client. The South Pars Phase Development Plan Office is located in the clients Organization and supervised by the third-party auditor on how the consortium progresses. It should be noted that the drilling section is outside the consortium and is not analyzed. In order to categorize the results of interview,

the categorization of concepts used. These concepts derived from interpretation of raw data, and no limitation on the number of concepts considered. The encoding of results involves crushing, conceptualizing, comparing, and eventually classifying the data. After comparing the data with each other, same concepts classified in a particular category and each of these categories can be divided into a number of subtypes according to different features.

The results identified in three categories; existing governance characteristics, existing governance mechanisms, and factors affecting it. The results revealed some of the causes in the existing governance system which led to undesirable consequences of governance, undesirable performance and ultimately failure of consortium.

After collecting the results from interview data and their axial coding, the following three categories can be used to categorize the factors influencing governance: Internal circumstances (leading to the spread of the examined phenomenon) and external (leading to the occurrence of the phenomenon under examination), the Terms governing the Consortium, the conditions of intervention. It can be seen in the Table 1 above.

By completing the data and their final codification, the Consequences of existing governance system can be categorized as follows. (Table 2)

Considering that main phenomenon and mental concern of the interviewees in this study was "Effective Governance on consortium Performance", the following research theorems can be formulated:

1. External and internal circumstances affect the "Effective Governance on consortium Performance"
2. Terms governing the Consortium affect the "Effective Governance on consortium Performance"
3. Conditions of intervention affect the "Effective Governance on consortium Performance"
4. "Effective Governance on consortium Performance" leads to The Consequences of Existing Governance.

Considering the above four theories derived from the results, the following theoretical model can be considered in the context of the central phenomenon of "Effective Governance on consortium Performance". (Figure 3)

## DISCUSSION AND CONCLUSION

Project created to achieve the goals; an organization of individuals to achieve a particular outcome with the start and end dates with certain constraints. The main objective of project governance is coherent and predictable delivery of projects in accordance with a predetermined plan and stakeholder expectations. This is possible by identifying factors and components that are effective on project governance. Main question in this research is study of how governance is influenced in mega multi-firm projects and its direct consequences, in response to this question, using a qualitative and exploratory research method, six mega multi-firm projects studied in South Pars phases. Data analyzed by grounded theory, coded and categorized and led to the final model.

The central issue in this research is "Effective Governance on consortium Performance". Research results show that external causes such as importance of

oil industry in country, ability of the parties (both leader and other partners), proper selection of partners and clear and comprehensive contracts are among factors that create need for effective governance in the country. Also, internal circumstances such as accountability of consortium parties, failure to guarantee by suppliers, project progress in accordance with defined plan, and provision of benefits of consortium, are among the factors that require the development and expansion of concept of effective governance. Terms governing the Consortium, such as political, economic, social and cultural conditions, are the factors that govern the rule and they can affect governance. Impact of shareholders, stakeholder, legal entity and other project stakeholders is among the conditions for intervention, which limits the issue of effective governance on consortium mega projects. The above influential factors result in the existing governance consequences that, as stated, lead to undesirable results for stakeholders and other parties of consortium, as well as an increase in time and cost of implementing the project.

## Future Research

1. The main feature of this research is focusing on mega multi-firm projects in Iran's oil industry, implemented through consortium. Therefore, researches that focuses on other dimensions of this research can identify different influential components; Like other international cooperation methods; strategic alliance or joint ventures. Comparing other results with results of this study helps to further develop the phenomenon.
2. Since governing is a living and dynamic category, after recognizing key concepts and variables in explaining this phenomenon, examining relationship between these variables or prioritizing them and determining their impact on each other, by using dynamic tools such as dynamical systems or with use of other data analysis methods is also recommended for future research.
3. The final result of this research is identifying the influential factors and consequences of them on research topic, provide a solution to these problems and move towards improving the performance of consortium and stakeholders' satisfaction are other suggested topics for future research.

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