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Causes of Common and Frequent Claims in Oil, Gas and Petrochemical Projects of Iran

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Abstract

Over recent years, frequent involvements in claims have been inevitable due to unpredictable economic changes and increasing complexities in construction industry. Therefore, even appropriately made contracts are not exempted from claims. On the other hand, construction contract claims are time-consuming, expense-involving and most likely leading to unsatisfactory results. However, there may be some positive outcomes, such as time extension or compensation of damages. To launch investigations, a list of important and frequent claims in oil and gas industry projects of Iran was extracted after a succinct documents review. Further, the most important claim causes were identified through conducting a questionnaire survey among contractors, consultants, owners and lawyers involved in such projects. Reliability of responses has been examined, accordingly. The study reveals that the external risks like political, social, cultural and economical issues are the most important causes for claims in this industry. Moreover, inadequate financial resources on the part of owner and contractor, failure in performing contractor's obligations and vague contract conditions resulted in formation of different interpretations; are some of the most important root causes of claims in this context.

Keywords: *claim, counter claim, dispute, iran, oil, gas, petrochemical*

1. Introduction

Generally any construction contract is challenging since it seeks to provide a specific remedy in case of breaching any terms or conditions of its framework. It may also make a contractual entitlement with respect to the specified events. Therefore, it is essential for different parties involved in the contract to obtain a full comprehension of its clauses, as well as potential remedies. (Suryawanshi, 2010).

According to uniqueness of the projects, claims can be evolved in the same rate as events during the project span, contract span, as well as legal relationship between parties. In other words, dealing with changes and unpredictable conditions are inherent parts of managing a construction project. Although an intelligently formed contract could diminish future claims to some extent, but it cannot entirely remove probability of occurrence of such disagreements. In additions, different participants of projects may find a claim as a way to protect their forecasted payback, or at least as a preventive measure.

Oil industry of Iran is an attractive context for players of construction industry due to enormous projects under execution in it. However, it is not possible to conceal risky and changing conditions of such working environment (Mortaheb, Ahmadian, 2011). Although many studies have been performed to identify causes of claims in construction industry around the world, oil industry projects of Iran are experiencing dissimilar condition. Monopoly of governmental organization and their bureaucratic obstacle to resolve disputes, special cultural, social, economical, and political condition of the country, and technical complexity and multidisciplinary nature projects are important aspects of oil industry which necessitate a separate study for its construction environment. The findings could also be applicable to other types of construction projects. However, priorities of those causes may differ from what have been concluded for oil industry.

This study intends to outline causes of common and frequent claims in oil, gas and petrochemical projects of Iran. The results would help local and international participants of Iranian petroleum industry to take their own strategies before getting involved into such construction contracts or have an effective plan to mitigate negative impacts of the identified issues, in case of occurrence.

2. Research Methodology

To find out important claims in oil and gas industry projects of Iran, firstly a comprehensive literature review was done to

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outline causes of claims in construction industry of the world. Meanwhile, the ways to resolve disputes in relation with claims were studied in order to understand those could be applicable for oil construction industry of Iran.

The identified causes of claims were localized through interviews with seven highly experienced people who are predominantly involved in claim management as their job. This group includes two university professors, two practitioners of construction industry, and three members of Iranian Chamber of Industrial Dispute Resolution. The interviewees were asked to incorporate more causes of claims that have frequently faced in their job. Accordingly, an index of causes for common and most frequent claims, including 56 items, was generated. Content of the index were categorized based on FIDIC Form of Claim Classification.

At second step, a questionnaire survey was conducted to examine probability and importance of the 56 identified items. Before starting the survey, quality of the developed questionnaire was approved by experienced specialists and authorities as well as academicians in the fields of construction engineering, law, and statistics.

To enhance validity of collected data, diverse range of participants, in terms of experience, educations, and organizational role, were going to be selected to take part in the survey. Meanwhile, based on authors' experience and points of view, qualified ideas in response to questionnaire survey were the most important issue for a successful investigation. Therefore, spending enough time for each individual respondent to assist him/her in case of any ambiguity, as well as selecting participants who have been actively and directly involved at least into three major claim cases were two determining factors for this purpose. In this regard, over 100 potential respondents were primarily identified from owner, consultant, and contractor organizations of oil industry to examine their quality for reliable filling of questionnaires. After a succinct evaluation, a short list of 62 persons was recognized to be eligible for taking part in the survey and the questionnaire was distributed among them. The filled questionnaire was received by a rate of 71%, including 44 respondents whose characteristics are shown in Fig. 1 to 3.

They were asked to assess probability and importance of each cause based on the Likert scale, where "1" shows very low probability or importance and "5" indicates very high likelihood or impact. It should be notified that the questionnaire consisted of two sections; section one to evaluate probability of causes and section two to judge their impact.

Data extracted from filled questionnaires were used to figure Relative Impact index (RI_e) and Relative Probability Index (RI_l):

$$RI_e(or\ RI_l) = \frac{\sum_i w_i}{A \times N} \quad (1)$$

Where W_i is the level of impact (or likelihood) based on Likert scale = 1, 2, 3, 4, or 5 corresponding to very low, low, medium, high, and very high, respectively; A is the highest value of the W_i (here is 5) and N is the number of respondents (Martilla and James, 1977).

Upon calculation of these indexes, Severity Index (SI) could be formulated as following:

$$SI = RI_e \times RI_l \quad (2)$$

This survey had helped authors to prioritize causes of claims based on the ideas of respondents by constituting probability-importance matrix and equivalent severity values and the causes were prioritized based on their calculated Severity Index. The results of calculations are shown in Tables 1 to 4.

The filled questionnaires were statistically analyzed to conclude with the most important causes of common and frequent claims in oil industry projects of Iran. Further, validation of top ten causes was confirmed by three members Iranian Chamber of Industrial Dispute Resolution (a formal board of arbitrators under governance of local jurisdictional system). Although they had minor comments on priorities among top ten causes, those received full approval as the main causes of claims in oil industry projects of Iran.

Finally, top ten important causes of claims were listed and analyzed to investigate how those may create claims and how those can be prevented.

3. Disputes and Claims

Implementing a project is usually associated with participation of different players who have had diverse objectives and interests resulting in disputes and disagreements. There are some academic and professional statements to clarify definition of dispute and claim on various occasions. On a legal description:

"Disputes are disagreements between the contractor and owner over some aspects of contract performance. In addition to unsettled claims, disputes may involve such matters as substitution for specified materials, the responsibility for delays in project completion, and the effect of changes ordered by the owner." (Nunnally, 2007).

This definition has been restated by Stephen Robbins, in his book entitled "organizational behavior" (Robbins, Judge, 2007).

Almost in all construction contracts, claims and the right to claim play a significant role in the contractual relationship between employer and contractor. In *The Oxford Companion to Law*, a claim is defined as a general term for the assertion of a right to money, property, or to a remedy (Walker, 1980). A similar definition is given by Canadian law dictionary.

According to PMBOK Guide (2004:354), claim is a request, demand, or assertion of rights by a seller against a buyer, or vice versa, for consideration, compensation, or payment under the terms of a legally binding contract, such as for a disputed change. (PMBOK, 2000).

In order to introduce claims and to get to a unique definition and consensus in the claims in question, three factors "claimant, objective, cause" have been applied. The claimant will be contractor, owner or sub-contractor. (As to a claim, the purpose of arising a claim and the claimant's aim to arise is applied to recognize them.) The claimant in a special claim may request to

extend the contract period, to adjust its costs, to receive compensation, or to preserve its contractual entitlements. Whereas the claims are beneficial to companies, it would be highly probable to be arisen.

Claims naturally pertain to project risks. Therefore, it was decided to draw an analogy between claim management and risk management. Accordingly, similar approach could be taken to analyze claims, in which probability of occurrence and ranges of impacts (importance) are two constituent elements for prioritization of identified causes of claims.

Some practitioners believe that a project manager approximately spends 25% of his/her time to settle tensions and disputes and in many cases, there is a reverse relationship between dispute and performance. The more disputes and tensions, the less will be efficient performance. Furthermore, claims not only deepen disputes and transfer it to management layers, but they also cause discontinuity of affairs and change in methods leading to cost and schedule overruns.

4. Causes of Claims

In industrial projects, claims are being arisen with the purpose of compensating damages incurred by claimant organizations, in addition to a glance at its profitability. Therefore, every factor causing damage to contractor's or owner's organization and preventing them from reaching their goals connected with project, can persuade them to claim. If causes of such damages had been taken into account, it would have been enabled project participants to recognize probable claim causes. By this mindset, damages can be divided into internal and external sorts. (MAPFRE RE, 2010) While internal damages are referred to problems in organization of different project beneficiaries, external damages include change in rules, job condition, force majeure, and any other issues beyond control of project parties.

The outcomes of some previous investigations into reasons for arousing a claim could be classified into two main groups. The first one which can be named as "strategic" are referred to improper decisions before awarding a contract and the second set are related to incidents during project execution period which are more tactical in their nature.

Uncompetitive bidding, inappropriate type of contract, unfair and unclear risk sharing, overly optimistic time, cost, and quality targets by owner, and incompetent and nonqualified project members are examples of the strategic causes (Jergeas and Hartman, 1994; Kumaraswamy, 1997). The tactical origins of claims include but not limited to variation in scope of work, changed (site) condition, omission and errors in contractual documents, low quality design, and delayed delivery of information (Jergeas and Hartman, 1994; Al-Moumani, 2000; Abd El-Razek, Bassioni, and Abd El-Salam, 2007). In a deeper thinking, even tactical causes can be pertained to wrong judgments in initiation phase of a project. In other words, any decision in the project outset may have a prolonged impact until closeout stage.

5. Strategies for Prevention or Confrontation with Claims

To prevent claims a comprehensive investigation has been done by Diekmann and Giraed (2001) through statistical analysis of 159 projects. In this research, human, process, and project aspects had been examined to recognize the most important one in avoiding claims. Findings have revealed that humans can play the most effective role in this matter. The results of other studies indicated two different perspectives. The first view explores ways to resolve disputes after occurrence of claims. Therefore, different strategies can be taken against an arisen claim. In the case of approving damage, necessary remedies will be put into action to cure it. Whereas claims are conditionally and partially accepted by opposite party in majority of occasions, a mechanism has been anticipated on contract to develop a win-win strategy after transactions between various sides of that claim. However, it is likely not to reach consensus about the issue (Skene, Shaban, 2002). Negotiation, assigning project neutral, and mediation are usually forecasted solutions in which both parties will resolve the disputes by their own (McGeorge and Palmer, 2002).

Sometimes, there will be disagreement about issues leading to appeal to out of project players. Consequently, a list of methods would be available where third party authorities intervene to settle the issues between both sides of the argument. Mini-trial, administration board, binding arbitration, and litigation could be considered as instances for this group where owner and contractor will increasingly lose their control over the outcomes in the order that just mentioned. Furthermore, cost and degree of hostility of these processes are in growth, respectively (Eilenberg, 2003).

Counterclaim has been a common and evolving strategy in construction industry that is taken by opposite party of claimant firm, especially when there are significant disagreements with regard to different dimensions of related debate. This type of claim is also known as strategic claim and is utilized to maintain rights, reduce loss of properties, and time adjustments via several negotiation sessions. Besides, this would prevent involving in time and effort-consuming jurisdiction process, in the hope of ending with satisfactory resolution of cases.

By definition, a counterclaim is an assertion made by a respondent party which can be conveniently examined to dispose an action originally initiated by the claimant party. It is not necessarily a defense, but a substantive claim against the claimant which could have underlined an independent action. The concept of convenience stated herein signifies that the background of the counterclaim is similar to that of the claim and results from the same set of facts and events or route courses.

Nevertheless, some technical advices have been included in the academic resources to facilitate resolution of aroused claims. Careful study of contract as well as documentations and keeping records are among the most important factors for successful claim management (Jergeas and Hartman, 1994).

By the second outlook, some ways are predicted to help parties

involved in a project taking collaborative approaches which would reduce probability of emerging a claim. Therefore, partnering, alliancing, stakeholder management, and constructability review are recommended structures to be taken into consideration for maximizing involvement and satisfaction of each interested party (Blake Dawson Waldron, 2006).

6. Dispute and Claim Categorizations

In this research "The FIDIC Form of Contract" was used to categorize claims, keeping in mind that all contracts written by National Iranian Oil Company (NIOC) are in strict compliance with conditions of FIDIC form of contracts.

Generally, disputes may be resulted from any one of the following main groups (Bunni, 2005):

1. Changed conditions: Conditions different from ones represented by the contract documents, or known at the time of bidding for the work, such as change in soil condition, or unknown obstructions, etc.
2. Additional work: Disputes on whether additional budget and time is required for extra works or not, or even whether a piece of identified work is in the scope of contract or not. Omissions in the design documents, requiring changes to make a system work, especially if they appear in a subtle way through the shop-drawing review and approval process is always frustrating for designers who are asked to incorporate those items free of charge! Also, beware of changes requested by end-users (distinct from owners and those ordered by project management team in owner organization) of project.
3. Delays: These refer to delays tightly beyond contractor's control and may be caused by owner directly, or by one of its delegates. A prime example is failure to provide contractor with access to jobsite of the work in a timely manner, or equipment promised by owner is not supplied on-schedule. More frequently, required documents and drawings are not delivered in a time that suits the work, or shop drawings are not reviewed on the right time (Alkass, Mazerolle, Harris, 1996).
4. Contract time: Some disputes may arise over time extension requested by contractor on what he/she interprets it as either changed condition of contract or delays caused by owner. In addition, owner intervention that explicitly gives instructions to accelerate the work in order to meet contract completion date, as well as some implicit mandates given by client to incorporate additional work without a corresponding time adjustment could be considered as sources of debates.

Essentially, other than claims under statutory law, claims in construction contracts may be based on legal and non-legal concepts. Therefore, if the categorization of a claim is required, it could be done in accordance with the following groups: (Bunni, 2005).

1. A claim under the contract: The first category is related to a claim based on the stated grounds of contract for emerging a special event, which determines a remedy for entitled party, subject to the effect of an applicable law.
2. A claim arising out of or in connection with the contract: The second category belongs to issues arising out of or in indirect connection with contract where the remedy is not designated in the contract, and the claimant needs to invoke a provision of the applicable law to preserve his/her right. Therefore, if the claim is valid, the remedy will lie under the provisions of the applicable law of the contract.
3. A claim under the principles of the applicable law: It includes cases resulted from application of the principles of an applicable law, either by the parties to the contract or against third parties. This could lead to a claim under the law of tort, or delict as it is referred to in some jurisdictions.
4. A claim arising out of the principle of quantum meruit: The fourth category includes claims based on the ubiquitous truth that an individual is entitled to be paid a reasonable amount for the work done, whether a contract exists or not. This is referred to in some legal systems as quantum meruit or 'as much as one has earned' and has been often equated to a claim for an undue enrichment.

   The payment amount has not been explicitly expressed in some contracts; instead, the contract states the right for the party (person) to claim for a reasonable sum or the price that will be agreed from time to time, the fundamental of quantum meruit will be applicable
5. A claim for ex gratia payment: Final sort of claims concerned with extra payment for completion of the project without appealing to arbitration or litigation, while the probable claimant is not contractually entitled for such payments. It is called an ex gratia payment and is not based on any legal system, but rather some commercial sense or benefit in reaching a settlement between the parties without acceptance of liability.

7. Important and Frequent Claims in Oil Industry Projects of Iran

The investigations on oil industry projects of Iran primarily

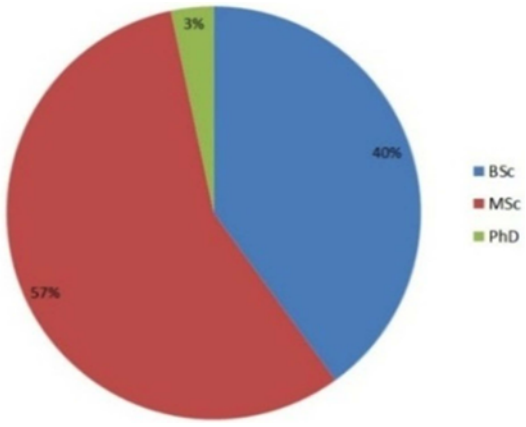

Fig. 1. Respondents' Education

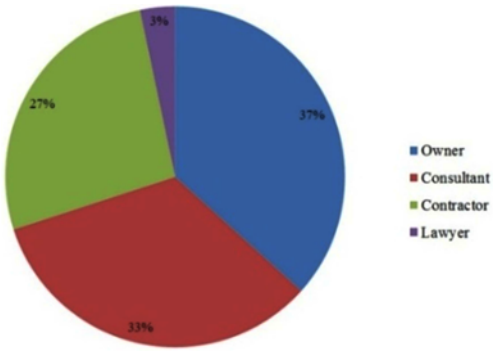

Fig. 2. Respondents' Organizational Role

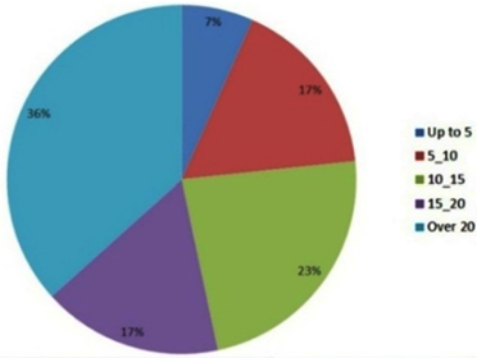

Fig. 3. Respondents' Related Experience

Table 1. Important and Frequent Claims in Oil and Gas Projects in Iran, SI and Ranking (A Claim Under the Contract)

1) A claim under the contract					
1-Changed conditions					
Sr.	Claimant	Objective	Cause	SI×25	Rank
1	Contractor	Extension of Time	External Risks (Political, Social & cultural, Economical) Occurrence during construction contract	16.37	1
2	Contractor	Legal Action	Claims against architect/designer because of Standard Professional Liabilities	6.63	48
3	Owner	Legal Action	Failure in performing contractor's obligations	13.10	4
4	Owner	Compensation	Insufficient mobilization by contractor	9.13	24
5	Owner	Compensation	Defective work by contractor	12.30	9
6	Contractor	Legal Action	Inadequate financial strength on part of the owner and failure in obligations	15.17	2
7	Owner	Legal Action	Inadequate financial strength on part of a contractor and failure in obligations	13.50	3
8	Contractor	Legal Action	Inadequate financial strength on part of subcontractors and failure in obligations	11.27	14
9	Owner	Legal Action	contractor deviance from project main path	8.90	28
10	Owner	Legal Action	Infraction of Contractor HSE staff in delivering right reports	6.70	46
11	Owner	Legal Action	Inadequate quality in sub-contractor's works	9.13	24
2-Additional work					
12	Owner&Contractor	Legal Action	Dispute regarding Contract Interpretation	13.10	4
13	Contractor	Cost Escalation	Omissions in the design documents, requiring changes in the shop-drawing	11.73	13
14	Owner	Compensation	Omissions in changes requested by the owner of the project	9.97	20
15	Owner	Legal Action	Failure in transferring technology by contractor when there's no clear definition in contract	7.10	42
16	Owner	Legal Action	Failure in transferring technology by contractor when there's no measuring indicator in contract	6.47	49
17	Owner	Compensation	Problems with operating the product because of defaults in construction phase	12.13	10
18	Owner	Compensation	Problems with operating the product because of inadequate operators training	9.07	26
19	Owner	Compensation	Failure in performing new instruction because of no limitation in description of activity in contract	8.30	35
20	Owner& Contractor	Legal Action	Conflicts occur between general & private conditions in contract	6.90	44
3-Delays					
21	Contractor	Extension of Time	Delays in provisional Acceptance deliverables	10.87	15
22	Contractor	Extension of Time	Delays in materials/equipment delivering that are in owner obligation	12.73	7
23	Contractor	Extension of Time	Delays in materials/equipment delivering that are in contractor obligation	12.50	8
24	Contractor	Extension of Time	Suspension in a construction contract because of Force Majeure	9.50	22
25	Contractor	Extension of Time	Failure to give access to the site of the work in a timely way	6.87	45
26	Contractor	Compensation	Delays in performing sub-contractor's obligation	10.17	18
27	Contractor	Extension of Time	Termination in a construction contract by owner's favorite	8.83	29
28	Owner	Compensation	Termination in a construction contract because of contractor's defaults	9.20	23
4-Contract time					
29	Contractor	Extension of Time	Suspension in a construction contract because of delaying in owner's obligations such as handing over the site,...	7.63	39
30	Contractor	Extension of Time	Shop drawings are not reviewed and approved in a timely manner	10.83	16
31	Contractor	Extension of Time	Delays in delivery of Technical Documents in an engineering contract (drawings & specifications)	10.20	17
32	Sub-Contractor	Compensation	Delays in sub-contractor's payment	12.10	11

revealed 56 common causes of claims based on the ideas of professional interviewees, as are listed on Tables 1 to 4. These common causes were used as a basis for enhanced precise examination and ranking through a questionnaire survey. Survey participants for determining the probability and importance of the 56 identified claims according to FIDIC Claim Form Classifications had the following qualifications. Figs. 1, 2 and 3 show educational, organizational and experience compositions of respondents, respectively. As it is shown, diversity of survey participants was taken into consideration in terms of level of education, role of their organization, and experience.

The intention for selection of this mixture was to include various interests and to increase consistency and validity of the results. In general, diagrams indicate high level of education and

Table 2. Important and Frequent Claims in Oil and Gas Projects in Iran, SI and Ranking (A Claim Arising Out of or in Connection with the Contract)

2) A claim arising out of or in connection with the contract					
1-Changed conditions					
Sr.	Claimant	Objective	Cause	SI×25	Rank
33	Contractor	Cost Escalation	Non identifying limit and kind of contract Insurance	6.37	52
34	Contractor	Cost Escalation	Non identifying how to pay taxes and government charges in contract	6.47	49
35	Contractor	Cost Escalation	Latent Conditions such as subsurface, changes, and differing conditions	6.47	49
36	Contractor	Cost Escalation	Conditions different from that known at the time of bidding such as different soil conditions,…	9.00	27
37	Contractor	Cost Escalation	Replacement of project location (Relocation of project site)	7.87	37
38	Owner	Compensation	Cost Overrun because of using alternative methods by contractor to accelerate delayed works	11.80	12
39	Contractor	Legal Action	Owner's excessive control and inspection that make problems in performing project works	8.57	32
40	Contractor	Cost Escalation	Lake of Project rate of return definition that is set or actual in contract	7.00	43
2-Additional work					
41	Owner	Compensation	Re-inspection and test because of low quality in deliverables	8.60	31
42	Owner	Compensation	Imposed payments because of Re-construction in case of rejected deliverables	7.40	40
43	Contractor	Legal Action	Failure in Owner's obligation because of report's obligatory phrase	8.40	34
44	Contractor	Cost Escalation	Failure in owner's obligation because of forgetting sufferance changed schedule	8.57	32
45	Contractor	Cost Escalation	Instruction to prepare detailed reports when there's no agreed format attached to contract	5.73	55
4-Contract time					
46	Contractor	Extension of Time	Acceleration in an excusable delays to meet the contract completion date	7.20	41
47	Contractor	Extension of Time	Instructions to incorporate additional work without a corresponding time extension especially if the work is on the critical path	10.00	19
48	Contractor	Legal Action	Applying Liquidated Damages Terms for delay in Completion of Work	8.03	36

Table 3. Important and Frequent Claims in Oil and Gas Projects in Iran, SI and Ranking (A Claim Under the Principles of the Applicable Law)

3) A claim under the principles of the applicable law					
1-Changed conditions					
Sr.	Claimant	Objective	Cause	SI×25	Rank
49	Contractor	Legal Action	Disputes in the bid proposal process by owner such as non-acceptance of proposal by owner because of a little delay.	7.67	38
50	Owner	Legal Action	Disputes in the bid proposal process by Contractor such as non-willing by awarded contractor to sign the contract.	6.67	47
51	Owner&Contractor	Legal Action	Nonconformity in principle of confidentiality	6.13	54
52	Contractor	Legal Action	Request for vitiation of unfair & unreasonable liquidated damage	4.97	56

Table 4. Important and Frequent Claims in Oil and Gas Projects in Iran, SI and Ranking (A Claim Arising Out of the Principle of Quantum Meruit)

4) A claim arising out of the principle of quantum meruit					
1-Changed conditions					
Sr.	Claimant	Objective	Cause	SI×25	Rank
53	Owner&Contractor	Compensation	Disputes in Oral Contracts/Agreements	9.57	21
2-Additional work					
54	Contractor	Cost Escalation	Applying Bonus/Incentive Terms for Early Completion of Work	6.17	53
55	Contractor	Cost & Time Escalation	Disputes over the pricing and timing of additional work required	13.00	6
56	Contractor	Compensation	Instructions served by Owner before contract conclusion or effectiveness	8.67	30

experience in the target statistical sample. Details of this sampling have been explained in research methodology.

The validity of the questionnaire was also examined by SPSS software. Cronbach's Alpha was calculated to be 0.912, which was well above 0.7 confirming validity of the survey outputs (Santos, 1999).

The magnitude of Severity Index for different causes were calculated based on Eqs. (1) and (2) the results are depicted in Table 1 to 4 in which identified causes of claims have been categorized considering FIDIC definitions. In addition to corresponding SI, claimant organization, its objectives, and ranking of each cause among all factors are presented here.

8. Discussions

Top ten important and the most severe claims in oil and gas industry projects of Iran are summarized in Table 5.

8.1 External Risks

As it is shown, external risks could be surprisingly considered as the most significant origin of claims.

To detail scope of external risks, a succinct exemplification would be useful. External risks are a main category threats which can be divided into some subgroups:

- *Political risks*; includes war, volatile political condition, labor strikes, and disputes that can disrupt construction tasks and may negatively affect project objectives. Changes in rules and regulations, corruption, bribery, and delayed issuance of permits are some other threats which are mainly created by governmental organizations.
- *Social and cultural risks*; like criminal acts, addiction, and conflict resulted from cultural gaps are major concerns of this group.
- *Economic risks*; includes inflation, abrupt price increase, fluctuating exchange rates that will influence profitability of projects. Shortage of different resources such as labor, material, and equipment are effective factors which can jeopardize project success.
- *Natural risks*; this group highlights unexpected weather condition and unforeseen site condition.

8.2 Inadequate Financial Strength on Part of the Owner and Failure in Obligations and

8.3 Inadequate Financial Strength on Part of a Contractor and Failure in Obligations

The root cause of this weakness can be explored in economical risked as detailed before. Its immediate consequence is "stop and go" during construction which could result in liquidate damages for owner and cost of idle resources for contractor.

8.4 Failure in Performing Contractor's Obligations

Unfair risk sharing attitude of owner and inaccurate evaluation of contractors may be the root cause of this phenomenon.

8.5 Dispute Regarding Contract Interpretation

Vagueness of contract clauses and inadequate scrutinizing of those sections before signing contract will lead to inconsistent and bias interpretations. This will create disagreements, specifically when considerable costs are associated with the case; ending in litigation.

8.6 Disputes Over the Pricing and Timing of Additional Work Required

When scope of work is not clear and it is subject to future deletion and addition, and also there is no obvious mechanism for on-the-spot decision making on impact of such variations, it is evident that contractor will demand its right for time extension and compensation of costs. Under such circumstances, the reasonability of quantities couldn't be easily examined.

8.7 Delays in Materials/equipment Delivering that are in Owner Obligation

It is traditionally owner's responsibility to supply long lead

Table 5. The Most Significant Claims in Iran Oil and Gas Projects

Serial Number	Claims			Severity Index ×25
	Claimant	Objective	Cause	
1	Contractor	Extension of Time	External Risks (Political, Social & cultural, Economical) Occurrence during construction contract	16.37
2	Contractor	Legal Abuse	Inadequate financial strength on part of the owner and failure in obligations	15.17
3	Owner	Legal Abuse	Inadequate financial strength on part of a contractor and failure in obligations	13.50
4	Owner	Legal Abuse	Failure in performing contractor's obligations	13.10
5	Owner & Contractor	Legal Abuse	Dispute regarding Contract Interpretation	13.10
6	Contractor	Cost & Time Escalation	Disputes over the pricing and timing of additional work required	13.00
7	Contractor	Extension of Time	Delays in materials/equipment delivering that are in owner obligation	12.73
8	Owner	Compensation	Defective work by contractor	12.50
9	Sub-Contractor	Compensation	Delays in sub-contractor's payment	12.30
10	Contractor	Cost Escalation	Omissions in the design documents, requiring changes in the shop-drawing	12.13

items which convey a substantial weight of the whole project. Nonetheless, doing it effectively needs for independent strategy to ensure timely receiving of those on the job-site. Any delay in delivery of such equipment will disrupt other activities of contractor and he/she is entitled to ask for recovery of incurred damages.

8.8 Defective Work by Contractor

Reworks in construction are the main effect of faulty performance and owner will preserve his right to claim against contractor. It should be notified that these happenings are result of an immature process for quality control and assurance.

8.9 Delays in Sub-contractor's Payment

It is a common problem for subcontractors which may lead to labor strike and devastating impact on project progress. Lack of effective contractual clauses and receiving no relevant bond are the origins of this issue. Therefore, general contractor will postpone payment to his/her subordinate as much as he/she can.

8.10 Omissions in the Design Documents, Requiring Changes in the Shop-drawing

Incomplete and erroneous engineering drawings will result in unexpected and huge efforts in the shop engineering. Owner's rush to mobilize the construction site and low quality design are the underlying reasons for this shortcoming.

9. Suggestions for Proactive Management of Claims

Based on top ten identified causes, following preemptive actions are recommended to be taken:

- Taking partnering approach and developing risk sharing attitude among all parties with concentration on project progress and stakeholders satisfaction.
- Approval of certain and dedicated budget in both owner and contractor organizations, before entering into execution phase. In this way, investment of private sector is highly encouraged.
- Spending adequate time for investigation of contract documents and removing vagueness before signing them. To clarify ambiguities, several meetings could be held to divide the work into in-scope, out of scope, and gray areas and reaching to appropriate decisions for these parts during kick-off sessions.
- Taking independent strategies for timely placement of orders for long lead items, and expediting them by owner and contractors.
- Setting aligned and clear cost management system between owner and contractor and receiving labor bond guarantee. In addition, owner should find it vital to monitor satisfaction of all trades, regularly.
- Implementing an efficient quality control and assurance system in the project environment by a third party.

10. Conclusions

Vast amount of spent time and efforts, diversity of participants, and huge required capital have made oil industry projects of Iran known as a unique context. In this environment, claims play a significant role in cost and schedule overruns, communication, and organizational behavior.

Diverse practitioners and specialists from owners, contractors, and consultants who are actively involved in oil industry believe that project external risks could be considered as the most important root causes of claims in such environment.

Inadequate financial resources are the second significant causes of disagreements, either in the part of owner or contractor leading to claims and counterclaims. Improper site mobilization by contractor and delayed payment by owner are examples of insufficient funding which will usually have cascade of disruptive effects on project and each party will take strategies against other participants to recover its incurred damages.

Many of claims are initiated by poor risk management during project implementation phase. Among all risks, those associated with contract formation and administrations are highly influential and demand for great attention before formal entering into the contract. This could be achieved through fostering collaboration and risk sharing approach among all parties involved in execution of project. Meanwhile, owner and contractors should reach a consensus about their roles and responsibilities and take integrative strategies for smooth management of interfaces and remove probable vagueness. In this way, findings of current research would enable local and international firms, who wish to take part in oil industry projects of Iran, to cope with related challenges.

Future investigations could be done to quantify time and money wastage during claim management for both owner and contractors. Further, the findings would be compared with required investments for developing partnering framework among project stakeholders.

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