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Identification, Classification and Causes of Engineering Claims in Constructions Industry

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Abstract

Nowadays construction projects face various problems in operations and final phases of projects since project's staff (contractors, consulting companies and clients) are not completely aware of rules, conditions and contents of contracts or there is not enough coordination between plans and performance. Having a certain solution is complex and sometimes impossible and contractor usually doesn't acquire some of its working price or client pay more than determined results in term of quantity or quality, in other cases the operations of project remain unfinished. Investigation and management of claims from contractors and client's viewpoint are different and we can't define a certain algorithm for it. For proper claim management, firstly we should identify the classification of claims and apply a proper procedure for documentation and negotiation in proving and confirmation of claims with other stakeholders in the project. In this article we discuss the construction claim management model, then classify engineering claims and explain the causes for their formation.

Keywords: Construction claims, Claim management, Conflicts, Engineering Claims Classification.



Introduction

Construction industry is an important part of the economy in any country. In this industry, claims and legal issues have become more and more inevitable due to the increasing complexity and uncertainty involved in projects (Hackett and Dancaster 2000). These claims are indispensable in a construction contract. Some project management experts said that whether a project is profitable, largely depends on if the contractor can use the claim's clauses with ease. Also Claims in construction market are important and effective which means that contractors can use them to protect their rights and interests, reduce their loss, and improve economic efficiency (Song et al, 2015). This dispute arises due to the formation of disagreement (Cheung et al., 2002). When one party to the contract denies a claim made by the other party to the contract, it leads into a dispute (Patil, 2005). Today, the number of construction claims and disputes has been increasing and has become a burden to construction industry (Levin, 1998). The projects include those in the infrastructure, transportation and oil and gas sectors. Completing a project on schedule is a difficult task to achieve in uncertain, complex, multi-party, and dynamic environment of construction projects (Kartam, 1999). Because of this, the industry is always open to dispute. It is common for the claimant pursuing claims for work or services for defective work, delayed completion, changes of scope, etc. Dispute is a regular feature in the construction and consumes resources that would otherwise be used in a more productive manner (Cheung et al., 2007). Even when the most of experts understand the construction contracts and the most reasonable risk-allocation systems applied, claims will continue to present problems if they are poorly managed in practice (Zineldine, 2006).

Traditionally, construction disputes were settled in courts through litigation (Pinnel, 1999). However, litigation being too cumbersome for the dynamic nature of the construction sector; arbitration proceedings became the main mechanism for settling construction disputes (Gajria, 2000). The use of arbitration has been regarded more effective than litigation as an arbitral tribunal makes a determination based on facts and not precedence, and they interpret the contract rather than having a judge or jury to interpret the contract (Patil, 2005). Although this method is effective, expeditious, and economical as compared to regular court proceedings but many times the awards of the arbitrators are challenged in the higher court of laws and set aside for some valid reasons and exceptional cases (Iyer et al., 2008). The whole process becomes quite difficult to both the owner and the contractor (Iyer et al., 2002). If the parties knew the decision of the court ahead of time with some certainty, they are more likely to settle the matter out of court rather than encountering the expenses and aggravation associated with court proceedings (Iyer et al., 2012). The decisions of construction disputes are affected by a large number of complex and interrelated technical factors in construction, which makes it difficult to interpret (Chau, 2007). Construction claims are considered by many project participants to be one of the most disruptive and unpleasant events of a project (SP and LY, 2004). According to Vidogah and Ndekugri (1997), however, claims are becoming a way of life and, indeed, an indispensable part of modern contract systems.



There are many international construction projects of which the income was improved about 10% to 20% of the cost of successful claims (Geng, 2004), some values in claims were even more than the total value of the contract. Claims management is an important part of contract management, and project management as well (Song et al, 2015). Claims are that one party of a contract demands economic compensation from the other parties of the contract when the other parties fail to perform the contract correctly. In practice, both construction owner and construction contractor have rights to bring forward a claim. Claims are for economic compensation rather than punishment. In construction projects, we must take claims seriously by assigning specific people to be responsible for claims management, and running claims management through the whole process and each stage of the project implementation to improve the construction business management and project management (Yu, 2009). A construction claim arises when a party to a construction contract believes that in some way, by act or omission, the other party has not fulfilled its part of the bargain (Levin 1998; Kartam 1999). To put it in other words, a claim arises when one party to the contract has suffered a detriment for which that party should be compensated by the other party. Therefore, a construction claim is an assertion of and a demand for compensation by way of evidence produced and arguments advanced by a party in support of its case. Construction claims originate from a variety of causes both direct and indirect (Institute 1986). A number of major disputes can be largely traced to four basic sources:

- 1) The contract documents due to errors, defects, and omissions.
- 2) Failure to appreciate the real cost of a project in the beginning.
- 3) Changed conditions.
- 4) Stakeholders involved in a project.

However, the researchers were concerned with the construction claim process and focused on the variables that form the construction claim process.

Review model for engineering claims

Development of model variables

The key objective of the claim management process is to resolve certain problems in an effective and efficient manner (Bakhary et al, 2015). The represented mode in Figure 1 shows the claim's investigation process in construction industry. Based on a literature review, the researchers modeled and developed the construction claim process based on the following variables (Easton 1989; European construction institute 1996; Kartam 1999):

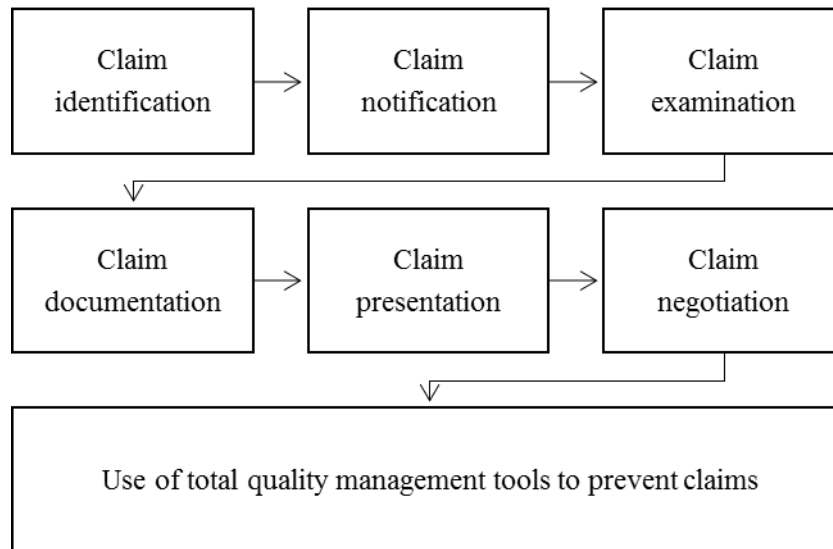


Figure 1: Development of model variables

Construction Claim Identification

Construction claim identification involves “timely” and “accurate” detection of a construction claim. This is the first and critically the important ingredient of the claim process. For example, some construction claims of excellent merit are lost solely due to failure of identifying them (Easton 1989). Thus, an awareness of job factors, which give rise to construction claims, is a skill that generally has to be specially acquired. Such learning not only sensitizes construction managers to potential construction claims, but also exposes a company-wide problems to contract management (Kululanga et al, 2001). Based on findings from Bakhary et al's research (2015) problems in detecting construction claims depend on following 9 categories:

- Lack of awareness among site's employees for giving notifications about current claims
- Lack of knowledge about construction and types of tasks
- Lack of enough time for performing tasks
- Lack of skills among staff and employees to understand the current situation
- Problems in detecting changes under work pressure while doing them
- Weak communication between boss, managers and operational units
- Unavailability of documents for identifying current claims
- Ambiguity in staff's responsibility and claim's realization
- Obscure processes and procedures for claims identification



Construction Claim Notification

Construction claim notification involves alerting the other party of a potential problem in a manner that is non adversarial.

Time limit requirements are very crucial and critical. For example, a typical contract provision such as “shall be confirmed in writing as soon as possible and no later than twenty days” means exactly that (Sawyer and Gillot, 1990). An initial letter of a claim notice to the other party should be short, clear, simple, conciliatory, and cooperative. It should indicate the problem and alert the other party of the potential increase in time or cost. It is very hard to precede these claims with other parties without being polite and sincere, helpful, and cooperative (Kululanga et al, 2001). Staff agrees on unavailability of documents, ambiguity in notification preparation processes, weak communications and their registering and lack of enough time for great workload as the main problems. This would give us the opportunity to review the operations and applying related tasks to reduce the impact of dispute, awareness for site manager lead to quick reaction and usually written documents with required details which are necessary to be prepared and registered. Preparation process is implemented carefully and having the required communicating skills for understanding related issues are necessary. These notifications are as follows (Azmi et el, 2015):

- Inaccessibility to supporting documents for notification
- Ambiguity in notification preparation process
- Weak communications/orders for notifiable registration
- Return of requests because of obscure claims
- Lack of time for preparing claims
- Obscure responsibility to other parties
- Short prescribed time
- Lack of standard implementation process

Construction Claim Examination

Claim examination involves establishing the legal and factual grounds on which the claim is to be based. This should also involve the estimate of the potential recovery. Such issues may have to be investigated by interviewing staff who worked on the project. The primary sources for claim examination could deal with project files, video footage, memos, etc., that must be used to prove the time and cost elements of the claim (Kululanga et al, 2001). Current problems for evaluation and examination of construction claims based on previous studies are as follow (Azmi et al, 2015):

- Inaccessibility to registered information for analysis and estimation of potential recovery
- Lack of time for precise investigation because of work pressure
- Weak communication against requiring data for claim analysis
- Lack of contract/ claim information base on original claims
- Ambiguity in claim examination procedure
- Lack of a standard formula for impact evaluation and error calculation
- Obscure responsibility for recovery evaluation
- Unrealistic formula for estimating damages



- Lack of required subsidiary organizations for facilitating the calculations

Construction Claim Documentation

Claim documentation is the collection of the hard facts that give the actual history of a construction claim. A well-prepared defendant quickly demolishes evidence and claim costs that are not supported by accurate records. For example, minute inaccuracies can be seized upon to cast doubt on the entire claim. The documented facts are the glue that holds the legal frame work together. If these are insufficient the claim will not stick (Kululanga et al, 2001). If the client doesn't have written documents, necessary intuitions should be prepared so its claims are proved and inefficiency can be resolved by systematic approach. Documentation should be done by integral goal of preparing written documents and samples for supporting the opinions and even if notifications are not available, documentation is the source of knowledgeable confirmation for subjects that are accepted by both parties, so they wait for written documents (Azmi et al, 2015), problems which are related to claim's documentation are as follow:

- Oral recommendations by contractor
- Some documents/ information are not available in written form
- Ineffective information registration
- Inaccurate information registration
- Lack of access to added documents
- Extra work for information recovery
- Lack of standard form for gathering construction data
- Lack of computer based documentation system
- High cost for recovering required information

Construction Claim Presentation

A claim presentation should be logically built up, well organized, and factually convincing. Thus, a claim should be written in a format that emphasizes the fact that a contract requirement was breached. A contractor must then demonstrate the resulting harm was caused by the owner's acts. Atkinson (1985) has fittingly said that presentation is best separated into two, the entitlement and the quantum. The former section should have the legal and factual basis while the latter should provide the estimated recovery of the claim. Available problems for presenting construction claims are as follow:

- Lack of access to related documents for claims registration
- Lack of required skills for confirming the claims
- Weak communication for claim presentation
- Lack of required time for claim preparation because of work pressure
- Obscure responsibility for complete reports
- Lack of standard format for claim registration
- Obscure process for preparing claim presentation



Construction Claim Negotiation

The goal of negotiation is getting to an agreement between the parties and prevailing against generated disputes. Getting to an agreement between project parties is difficult and negotiation is the main process for resolving conflicting disputes. Practically the negotiation process is established in the whole claim management and judgment processes and many researchers agree on this matter that disagreement in negotiation, lack of witnesses for parties and lack of proper negotiation skill are the main reasons for failure in negotiations. Strong evidence shows that, such process should be monitored by contractors and in many cases the failure in claims are the results of low documentations which has an impact of position of contractor in negotiations, improper claims might lead to dissatisfaction and failure in contractor- client relationships. The problem of not having good negotiating skills can be predicted in experienced employees and many contractors does not have a special unit for negotiations and it is usually done by site engineers or managers that doesn't have good negotiation skills. Success in claim negotiations is an important part of project cost and lead to lower legal results toward special claims (Azmi et al, 2015). According to Easton (1989) a structured and proper negotiation preparation includes (1) ascertaining that all information is current and complete; (2) minimizing the scope of negotiation beforehand so that insignificant points should not precipitate a violent argument and disrupt progress; (3) knowing one's weaknesses and trying to utilize weak points by conceding them in return from the other party; (4) for seeing problems; and (5) anticipating the opposition's next move. To benefit from this stage, a construction contractor needs experts that have skills for negotiation. There is a saying that "it is more important to be prepared than it is to be right." For example, in construction disputes, "right" is often difficult to determine and it is preparation for negotiation that really counts. Problems in claim negotiations are as follows (Azmi et al, 2015) :

- Disagreement about time of negotiations
- Lack of enough evidence about other parties
- Lack of proper negotiation skills
- Unsettled relationships with other parties
- Not having enough time because of high workload
- Disagreement because of legal, optional procedure

Use of Total Quality Management Tools to Prevent Construction Claims

The factors that lead to loss of time, cost increases, and other determinants of underperformance can be linked to specific management weaknesses. Such factors are often associated with lack of application of total quality management tools. By implication the natural use of total quality management tools at every stage of a construction project should result in substantial time and cost reduction in a construction project.



Engineering claims causes

In general, engineering claims in construction projects are related to 5 factors which are shown in figure 2 and are created based on disagreements and mistakes over these factors. Since these factors are important, we explain them in the next section of the article.

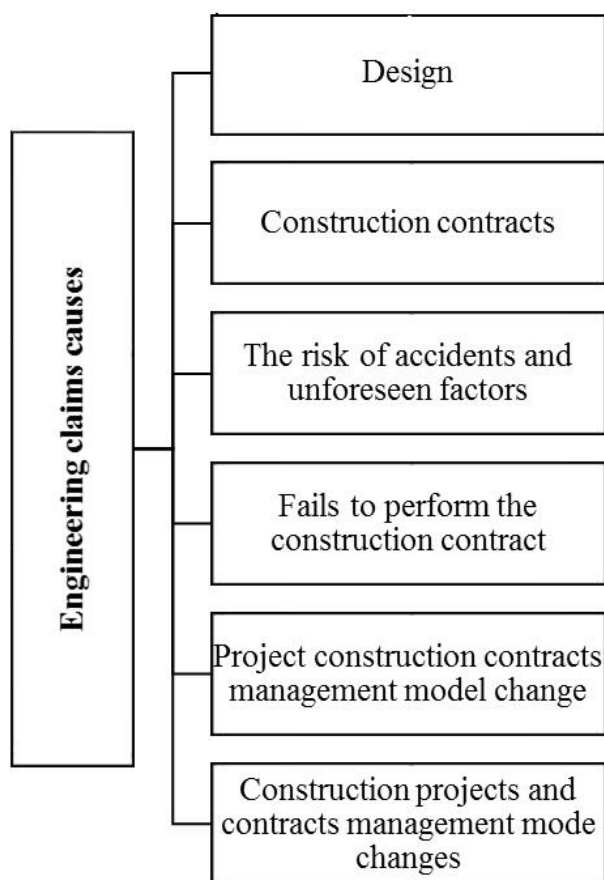


Figure 2: Engineering claims causes

Design

During the process of engineering, differences between the original design and the actual practice can cause claims on duration, labor, materials, etc (Song et al, 2015). If designers have enough information about conditions and activities at the beginning of design, they can avoid from these disputes.



Construction contract

During the process of engineering, the two parties signed construction contract without fully considering and clarifying the impact of various factors on the construction, which caused contradictions during the performance of the contract and led to the construction claims (Chang 2005).

The risk of accidents and unforeseen factors

During the process of engineering, natural disasters such as earthquakes, typhoons, quicksand mud, geological faults, natural cave, subsidence and underground structures and other unforeseen factors can cause claims (Song et al, 2015). Since these risks are not predicted in contracts, they can lead to conflicts between contractors and clients.

Fails to perform the construction contract

During the process of engineering, the parties of a contract failing to fulfill the construction contract due to different opinions, financial interests and other human factors can lead to claims too that paralyze the parties from performing their tasks (Song et al, 2015).

Project construction contracts management model change

In the current construction market, construction contract can be main contract, subcontract, nominated subcontract, labor contract, equipment and materials supplying contract. The complexity of contracts increased the difficulty of contract management. Any contracts which cannot be successfully performed or managed will lead to claims on schedule, quality, quantity, and financial condition (Qi, 2004).

Construction projects and contract management mode changes

From above, some unforeseen events could happen due to the long project duration and complexity of technology. Because of this, more or less claims will occur even the preparation of contract is very detailed, the content of contract is very comprehensive and rigorous, the parties of the contract perform the contract by great credibility (Song et al, 2015).

Recommendations to avoid from construction claims

To prevent from claims and prevailing them and also reducing the claims in the construction industry and based on reviewing many articles, these considerations are suggested for claim management managers, following rules are presented for reducing and preventing from claims in the construction industry (Zaneldin, 2006):

1. Allow reasonable time for the design team to produce clear and complete contract documents with no or minimum errors and discrepancies.
2. Establish efficient quality control techniques and mechanisms that can be used during the design process to minimize errors, mismatches, and discrepancies in contract documents.
3. Have a clearly written contract with no ambiguity.
4. Read the contract several times before signing it to understand any unclear clauses.
5. Have a third party to read contract documents before the bidding stage.



6. Use special contracting provisions and practices that have been used successfully on past projects. Useful information can be found in the ASCE booklet [15], which is about avoiding and resolving disputes during construction.
7. Develop cooperative and problem solving attitudes on projects through a risk-sharing philosophy and by establishing trust among partners (e.g., the owner and the contractor). This concept is known in the literature as partnering.
8. Implement constructability during the different stages of a project.
9. Establish a strategy on how to deal with tighter scheduling requirements.
10. Have signed change orders before starting doing these changes on the site.
11. Maintain proper job records in a timely manner including time sheets, diary records, reports, photographs, records of labors and weather and it's effect on progress, the progress of the construction, site instructions ,etc.

Results and discussion

The goal of this article is the identification of claims, reasons for their formation and giving solutions to prevent from them by studying previous studies and comments in this field. Mentioned phases consist of claim identification, notification, examination, documentation, presentation, negotiation and application of total quality management in construction claims management. The results lead to emphasize on proper documentation and data storage about the site and its staff while implementing the claims. Keeping a good record of project is an important part in summarizing and reporting and also a clear and standard procedure should be generated among contractors which facilitate claim examinations. Employees awareness, trainings on documentation and precise registration of claims and negotiations with clients are necessary too.

Conclusion

In summary, engineering and construction claims consist of a comprehensive and systematic project approach which require knowledge and skill in management, quality of technology, construction, legal and economic rules and etc. Organizations should perform effectively to apply construction claims and increase their profitability to be invincible in current competitive market. This article represent principles that contain construction claim and measurement framework development processes, also some of the contractors are not aware of this claim management method and its implementation which has an impact on construction claim management. The results of this study help contractors and clients to be aware of causes on claims and prevent from problems in related projects. Finally, we present recommendations to avoid from contradictions between project employees.

References

- Geng, Y.K. (2004). On project construction claims. Shanxi Architecture. Vol. 7. 86-87.
- Lixia Song, Junjie Wang, Lijun Song and Fang Guo. (2015). Claim Management of Construction Engineering. ICCREM.
- Nor Azmi Bakhary, Hamimah Adnan, and Azmi Ibrahim. (2015). A Study of Construction Claim Management Problems in Malaysia. Procedia Economics and Finance. 23 (2015). 63 – 70.



- Yu W.R. (2009). Discussion engineering claims. Engineering Technology. Yancheng Institute of Architectural Engineering. 36. 234-235.
- Ho SP, and Liu LY. (2004). Analytical model for analyzing construction claims and opportunistic bidding. Journal of Construction Engineering and Management. Vol.130. No.1. 94-104.
- Vidogah William, & Ndekugri Issaka. (1997). Improving management of claims: contractors' perspective. Journal of Management in Engineering. Vol.13. No.5. 37-44.
- Cheung Sai on, and Kenneth T.W Yiu. (2007). A study of construction mediator tactics- part I: taxonomies of dispute sources, mediator tactics and mediation outcomes. Build. Environ. Vol. 42. 752-761.
- Patil B.S. (2005). Building and Engineering Contracts. Fifth ed. Mrs. S.B. Publication, India.
- Cheung Sai on, Henry, C.H Suen, and Tsun-Ip Lam. (2002). Fundamentals of alternative dispute resolution process in construction. J. Constr. Eng. Manag. Vol.128. 409-416.
- Kartam S. Generic. (1999). Methodology for analyzing delay claims. Journal of Construction Engineering and Management. Vol.125. No.6. 409-19.
- Levin P. (1998). Construction Contract Claims, Changes & Dispute Resolution. Second Edition. Boston: ASCE Press.
- Zaneldin Essam. (2006). Construction claims in the United Arab Emirates: types, causes, and frequency. International Journal of Project Management. Vol. 24. 453-9.
- Atkinson A.V. (1985). Civil engineering contract administration. Hutchinsons, London.
- Easton G. R. (1989). Construction claims. Dept. of Civ. Engrg., Loughborough University, U.K.
- European Construction Institute. (1996). Implementing total quality in construction industry. Thomas Telford, London.
- Sawyer J. G., and Gillot, C. A. (1990). The FIDIC digest: Contractual relationship responsibilities and claims the fourth edition of FIDIC conditions. Thomas Telford, London.
- A Route to continuous improvement post project audits. (1996). Construction Round Table, Croydon, Surrey, U.K.
- Kululanga G.K, Kuotcha W, McCaffer R, Member, ASCE, and Edum-Fotwe, F. (2001). Construction contractors' claim process framework. Journal of Construction Engineering and Management. 309-314.
- Qi, B.K. (2004). Trove of project management (second edition). Dalian University of Technology Press, Dalian.
- Chang, Z.C. (2005). Construction Claims Analysis and Application of Research. Xi'an University of Architecture University of Science and Technology, Xi'an, China. 17-31.
- Liu, W.Q. (2010). Discussion of construction claims. Shanxi Building. Vol. 36. No.7. 232-233.