

TYPES, FREQUENCY & SEVERITY OF CLAIMS IN PAKISTAN CONSTRUCTION INDUSTRY

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ABSTRACT: Claims are becoming an industry in its self. With the increase in awareness to its clauses given in FIDIC, the frequency of claim is also increasing rapidly not only in Pakistan but around the globe. This research has been carried out on the public sector construction projects in Pakistan. Survey questionnaire was used to collect data from 84 respondents comprising of clients (13), consultants (27) and contractors (44). Top causes of claims have been identified and ranked. Analysis has been carried out on the 32 possible identified causes through literature review and pilot test. They have been ranked using the relative importance index (RII). Top five causes are (1) Change in scope of work, (2) Delay in payment by the owner, (3) Change or variation order, (4) Owner requested changes (5) Deficiency in the contractual document. Opinions of the respondents have also been taken on aspects like management of claims and key practices of avoidance of claims

Keywords: Pakistan Construction Industry, Claims, Management, Cost Reductions, Client, Consultant, Contractors

INTRODUCTION

Construction industry plays a major role in the economic growth of a nation and occupies a pivotal position in the nation’s development plans [9]. Globally, the construction and engineering services industry is regarded as one of the largest and most fragmented industry accounting for 10-12% of GDP in many countries [1]. The construction industry has also attracted special attention, in being the only manufacturing industry where the ‘factory’ goes to the customer’s site and also where each product is unique. Construction projects in general have highly complex circumstances during implementation, involve many stakeholders and interfaces, and are subjective by many external factors. The above condition and factors greatly affect the schedule and the success of a project and cause delays and cost over-run, which gives rise to a ‘‘construction claim’’.

Construction is a mutual interaction of three major parties; client, contractor and consultant. During the execution of a project, there are too many stages on which conflict can be aroused. There are many reasons, for arising of construction claims and on the basis of these reasons there are different types of claim. Some of them are frequent and some are rare and some of them are of a severe nature. In the current scenario of construction some reasons of these construction claims are contractual mistakes, low bidding, contractor’s mentality and client’s requirement.

Pakistan is an underdeveloped country. The methods and techniques used in public sector companies are outdated. Every industry in Pakistan faces problems, but the construction industry is ahead in this regard than all the other industries due to the nature of construction work. During the construction of any project, there are a number of variables involved. Some of the variables that alter and significantly influence efficiency are site, personnel, materials, machinery etc. No two projects are similar so the management faces a lot of uncertainties. These uncertainties result in delays and cost overruns which can be reduced, but cannot be eliminated completely. Some factors create bigger problems where as some problems are small and can be taken care of immediately. So, in this atmosphere like other countries

number of claims are filed in running construction projects which not only cause disputes among the parties, but also cause the suspension of projects and sometime referred to legal action.

CLASSIFICATION OF CLAIMS

Claims can be classified into different types depending on their kind, location and nature as shown in fig. 1:

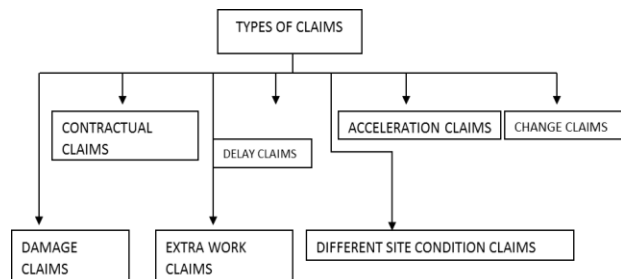


Fig 1

RESEARCH METHODOLOGY FRAMEWORK

The research was started with the identification of the problem and with the search for published data (as recommended by Cooper and Schindler [2]). It is after the identification of the problem and the review of the literature, the research design was carried out. The design included the data collection instrument and process of pilot testing the instrument before its actual use. The research instrument was developed in accordance with the study objectives and literature review. This research had used questionnaire as an effective tool to gather data and statistical analysis to interpret data into meaningful findings. Once the research design and methodology was outlined, it was the process of data collection and preparation along with the data analysis and interpretation. The findings and conclusions were drawn based on the collected data and its subsequent analysis. Total thirty two causes were filtered and presented in the questionnaire for data collection. The scope of the study was limited to only public sector projects including all the government institutions or agencies directly related to the construction industry.

SAMPLING DESIGN

Sampling design is one of the most critical steps in research design. Applying an appropriate sampling method can lead to a good sample design, which enhances the validity and reliability of the data. The estimation of the total population was done using the PEC registered list of contractors and consultants. Only those government institutes or agencies were approached who were well known and were within reach. The contractors were divided into eight categories as per PEC classification. The data was collected from all the categories of the contractors because in some cases the mega projects of public sector also involve sub-contractors of low category. The non-probability sampling methods are helpful when there are restricted resources, a lack of ability to discover members of the population, and a need to set up the existence of a dilemma [6]. Non-probability samples that are unrestricted are called convenience samples [2]. Therefore, non-probability convenience sampling was used because it is the inexpensive and simplest, but quite useful way to carry out the survey. There is freedom to choose whoever is available as long as they had information desired.

QUESTIONNAIRE DESIGN

Prior to data collection process, research instrument is extremely important since it facilitates the study direction of the researcher to clarify what are to find out, from whom and how it could be developed. Questionnaire is the most-effective way to involve a large number of people in the process [9]. Self-administrated surveys of all types typically cost less than the personal interviews [2]. A well designed questionnaire also motivates the respondent to provide complete and accurate information. Therefore questionnaire was used as a research instrument, which is a structured technique for collecting primary data.

DATA ANALYSIS

For this research, the collected data was analyzed using statistical tool. The questionnaire were processed, filtered and entered using spreadsheet and then analyzed by applying basic principles of statistics. In short, the data collected was processed into required information by interpreting and understanding the answer from the filled out questionnaires. The data analysis was done using Microsoft Excel 2010 and SPSS.

In order to rank the causes, relative importance index of each cause was calculated and sorted. After ranking, top twenty causes these were separated for further analysis and interpretation of results. The formula for the relative

importance index is as follows

$$RII = \frac{\sum i * f}{A * N}$$

Here, RII is the Relative importance index, i is scale value, f is the frequency corresponding to scale value, A is highest scale value i.e. 10 in this case and N is total number of respondents i.e. total frequency in this case.

THE RESPONDENTS

The questionnaires were sent out to the construction parties based on the list identified by Pakistan Engineering Council (PEC, 2012) [10]. Fifty questionnaires were distributed. Out

of 50 questionnaires, 34 responses were received, giving approximately 68% response rate. However, one response was incomplete and was not used in the analysis. Thus, 33 responses were available for the analysis. The effective response rate of 66% is considered acceptable and relatively high in the construction industry.

RANKING OF CAUSES

Relative importance index for each cause was calculated using equation 1. These are then sorted in ascending order and tabulated in Table 2. It has maximum scale value of 1 and the highest ranked cause has an index of 0.858 while the minimum cause has an index of 0.524. Top 10 causes have indexed more than 0.70 and selected for further discussion. Some of these causes are interrelated with each other while some are independent. Bar charts are drawn using the ranking data presented above. These bar charts have ranked causes in descending order on y-axis and relative importance index (RII) on x-axis with minimum and maximum value of 0 and 1 respectively. From the ranking of the relative importance index, top 10 causes are selected for further analysis having index value greater than 0.7.

CHANGE IN SCOPE OF WORK

During the execution of work, at any stage there are some exceptions when client need to change the scope of work due to any reason of interest. This change may cause a critical cost effect on the estimated cost. Thus, leading the contractor to put forward a claim.

DELAY IN PAYMENTS BY OWNER

For the execution of a project contractor arrange the manpower and machinery which charges heavily. So, if payments are not made to contractor on time it will create problems, work may stop which leads to delay of project.

Table 1 Education level and experience of respondent

Education Level	Frequency	Percentage
Lower than Bachelor Degree	4	11.764
Bachelor Degree	15	44.117
Master degree	11	32.35
Doctoral degree	4	11.764
Total	34	100
Experience of Respondent	Frequency	Percentage
2-5 Years	7	20.588
6-10 years	4	11.764
11-15 Years	5	14.705
16-20 Years	7	20.588
More than 20 Years	11	32.352
Total	34	100

Table 2 Frequency and relative importance index

Sr. #	Cause ID	Cause Title	Frequency Corresponding to Scale Value										Total Frequency	Relative Importance Index
			1	2	3	4	5	6	7	8	9	10		
1	C1	Acts of God (Force majeure)	2	4	2	4	9	9	5	8	7	9	33	0.709
2	C2	Strike	2	3	3	0	8	1	13	10	9	16	33	0.482
3	C3	Adverse weather conditions	0	4	7	9	12	4	6	9	6	7	33	0.67
4	C4	Change in the hydrological, geological and climate conditions	1	1	2	2	3	5	13	7	13	17	33	0.597
5	C5	Changes in government regulations	3	4	14	7	6	3	7	4	8	9	33	0.633
6	C6	Deficiency in contract document	1	3	15	8	10	8	9	2	5	2	33	0.782
7	C7	Short time period to read the contract thoroughly due to less time given for tender quoting	0	5	5	3	8	6	8	13	5	12	33	0.533
8	C8	Failure in understanding of contract clauses	3	2	5	4	6	3	10	10	14	8	33	0.524
9	C9	Delays in resolving contractual issues	2	3	5	2	7	5	8	11	10	11	32	0.638
10	C10	Low price of contract due to higher competition	4	3	4	3	5	6	5	9	13	12	33	0.527
11	C11	Original contract duration is too short	0	0	5	7	2	4	3	11	13	20	33	0.555
12	C12	Defective design	1	2	1	5	9	7	14	6	9	9	33	0.755
13	C13	Deficiencies in specifications and drawings	0	1	5	0	3	0	13	14	11	17	33	0.742
14	C14	Minor changes in design during construction	1 0	2	5	4	9	4	10	10	5	4	33	0.576
15	C15	Failure to obtain necessary permit for work	6	2	9	7	7	3	10	7	6	7	33	0.570
16	C16	Contractor's incompetence	2	1	3	5	6	4	9	13	10	11	32	0.594
17	C17	Incorrect interpretation of plans and specifications	5	2	9	2	5	2	9	12	14	4	33	0.582
18	C18	Non availability of construction material	4	0	4	1	8	0	3	12	12	19	33	0.676
19	C19	Poor project management	1	2	3	3	6	4	3	16	10	15	33	0.724
20	C20	Poor labor and equipment productivity	3	6	5	6	10	9	9	10	3	2	32	0.659
21	C21	Termination of work	1	2	8	9	10	5	5	13	5	7	33	0.715
22	C22	Change in schedule	1	2	7	10	7	6	9	12	7	3	33	0.694
23	C23	Different pricing and measurement of extra work	2	2	7	8	3	5	4	15	9	9	33	0.718
24	C24	Bad communication between parties	2	3	9	9	8	3	11	8	7	5	33	0.658
25	C25	Delay in payments by owner	1	2	7	3	8	4	11	10	13	6	33	0.845
26	C26	Denial of time extension	2	1	3	2	6	6	8	13	9	14	32	0.681
27	C27	Change or variation order	3	6	12	7	11	6	8	6	3	3	33	0.812
28	C28	Owner requested changes	2	2	5	5	7	3	11	12	12	6	33	0.794
29	C29	Oral change order by owner	2	4	0	2	8	6	7	14	11	10	33	0.706
30	C30	Additional demand of work from client	2	2	3	2	8	8	14	10	7	7	33	0.767
31	C31	Speed up construction (order from client)	1	2	7	6	9	9	8	7	10	6	33	0.694
32	C32	Change in scope of work	0	4	5	7	8	4	5	11	11	7	33	0.858

CHANGE OR VARIATION ORDER

If any activity or part of the project is changed, it will have different pricing. So, variation orders are prepared.

OWNER REQUESTED CHANGES

It is a common practice that during the execution of the project, client requests many changes in design from time to time. As a result contractor will be in a position to claim extra amount for these changes.

DEFICIENCY IN CONTRACT DOCUMENTS

Mostly the contract documents are complete in all aspects covering all the clauses necessary to define a path from award of contract to the handing over of the project. But, sometime there are some deficiencies which create problems.

ADDITIONAL DEMAND OF WORK FROM CLIENT

Sometime, Client demands extra work which increases the cost of the project. So, the contractor makes a claim for that extra work.

DEFECTIVE DESIGN

Sometime there is a situation revealed at some stage when parties of project came to know that the working design is defective. It may lead to change the entire design and to demolish the existing construction work. This situation causes the delay and give rise to a claim.

DEFICIENCIES IN SPECIFICATIONS AND DRAWINGS

Specifications and Drawings are the backbone for the execution of any project. If there are deficiencies in specifications and drawings it can cause misunderstandings and problems.

POOR PROJECT MANAGEMENT

Project management is very important for its completion within time and cost. Poor project management can cause delay and cost overrun.

DIFFERENT PRICING AND MEASUREMENT OF EXTRA WORK

The change in market prices of materials and different rates of items of work sometime gives rise to an additional demand of payment from the contractor. Also extra measurements are the reason of the extra cost of the project.

ORGANIZATIONAL CULTURE IN PAKISTAN:

During this research, a number of well reputed organizations were asked that whether they have separate division for dealing with claims related to construction and most of them responded that they don't have any separate division for dealing with claims. We also investigated from them that what is the main reason for not having any separate division. The result of the survey is depicted in fig 2.

FREQUENCY OF CLAIMS:

In this study, we asked each and every person that according to them, which claim is the most likely to occur. The data which obtained was very scattered and no sure short result could be predicted from it. Reason for this scattered result might be that each engineer while reading this question keeps his past experience in front and answers it according to his experience, whereas the experience of every individual can be very different from other. Giving us these unpredictable results as shown in this pie chart fig 3.

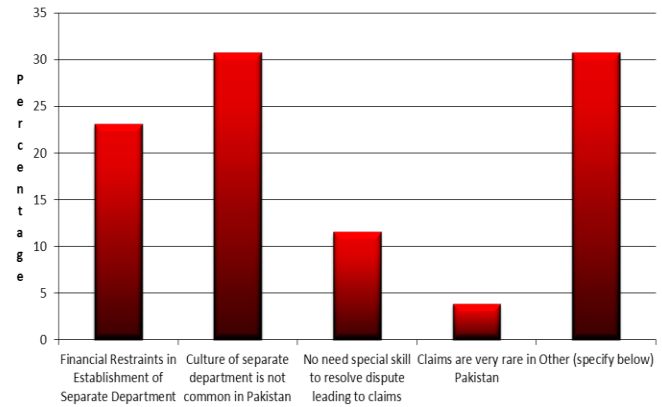


Fig 2: Reasons for not having separate claim management department

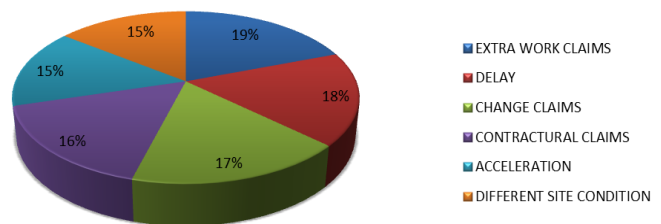


Fig 3 Frequency of different types of claims

CONCLUSIONS

- The top rated causes by all the parties are: Change in scope of work, Delay in payments by owner, Change in variation order, Owner requested changes, Deficient in the contract document, Additional demand of work by client, Defective design, Deficiencies in specifications and designs, Poor project management, Different pricing and measurement of extra work.
- On the party basis top rank was:
 - Client – contractor's incompetence
 - Contractor – change in scope of work
 - Consultant – act of God (force majeure)
- Most of the top twenty causes were from the construction and general causes.

The causes in objectives phase, tendering and project handover phase were ranked least important.

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