Influence of Claim Management in Construction Industry

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Abstract: ***Most construction projects are suffering from claims due to many reasons. Claim emergencies have risen for ten years due to the critical political situation. These claims have a bad impact on all groups who were work in the construction field. The impact of claim could be followed to cost overrun, loss of efforts and suspension of work, contract termination. This investigation means to recognize the real reason for causes of claim in construction and demonstrate their difference between respondent concerning individual, company and organization traits. It also aims found the important factors in developing for the management of construction project claim to predict claim occurrence and to mitigate the negative impact of a claim. The objective of the study achieved through a valid questionnaire obtained from several construction companies. The questionnaire survey was conducted involving the contractor, consultant, client point of view. The result of the questionnaire encountered in the SPSS software for finding the major factor that affects the construction. The finding demonstrates the absence of site attention to detect claims, detachment or inaccessible of related documents proactively, and conflicts which develop during owner/contractor negotiation are all critical issue related with the system of claim management. My work aims to distinguish the various claims through review paper and to recognize the most impacted causes of claim in our region***.

Keywords: Claim, Construction, Management, Regression Analysis, Relative index method (RII).

I. INTRODUCTION

The construction field is unique not as same as other industries. It has stressed that the construction industry includes a wide scope of job, workplace, making it interestingly not the same as various industry. One of the real difficulties influencing the construction industry is claims. A claim case is a demand for payment for the destruction caused by any participant in the construction process. Also, the claim is the looking for of thought or change or both by one of the participants to an agreement based an express contract provision.

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Construction claim has a historical impact on the undertaking cost and time. As referenced already, it becomes a heavy load to the industry. Consequently, researchers have put a great deal of time and importance in deciding the reason for that claim. Many construction contributors evaluated the claim construction is one of the most unmanageable matters in the project. Claims are turning in to a lifestyle. The claim mainly arises during the execution of the project and that cause the delay in delivery of the construction .The significantly expanding volume of claim is the consequence of the rising complexity of the project in construction. Development in the construction industry, in reality, is a measure of the economic conditions of a country. The reason behind the claim management is because the industry consumes a wide variety of cash flow; on the other hand, it is opposite to the construction industry: most project exhibit cost overruns, time extensions, and conflicts among parties widely due to claims.

Construction management is the procedure of recruit and co-operating assets to advance a claim from distinguishing proof and examination through readiness, and introduction, before it continues to negotiation and settlement [12] . The primary objective of the research is to list out the claim factors that the construction industry overlay yet to discover the key factor that can fundamentally impact the construction industry. This study distinguishes the key component and possible computation to deal with a claim. All claim cases are seen in the questionnaires survey. The key goal of the claim management is to determine certain issues in a compelling what's the more, proficient way to resolve the claim and to avoid expensive disruption and delays to the project

II. RESEARCH METHODOLOGY

The claim is inescapable in the construction industry, and they can exclude or shorten by considering & understanding their vital causes. Several reasons of claim in construction found in many kinds of literature and research papers, but no one can introduce an important number of claims to prove the normal practice [23]. Reason of claims is unique, and information about them can enhance understanding depends on the factor involved. The perspective of a consultant owner and contractor may change based on how the sensation of claim arises.

The Claim originates from a variety of factors; both direct and indirect [4].

Mostly the claim referred to cause a poor investigation of the site, incomplete drawing bid, disruption of construction [16]. In the claim, cost overrun is one of the factors that originate from various sources as order change and unforeseen ground condition [20], [18], demonstrated the claim in construction, such as the delivery of material, weather condition, poor site supervision, insufficient plan & specification, work acceleration, and schedule problem. [10], [23] also examined the various reason for the claim examined already the(i.e.) scope of work & change orders during construction. These are the significant reason for the claim. [5] show claim arises from several cases namely defective specifications. [5] Also, demonstrate various reasons for different claim site condition. Change of scope of work, owner causes of disruption or delay [8]. [23] Highlighted the most of these claim caused due to Defect omission in the contract document,[21].Highlighted that causes of claim in the construction industry, including the lack of knowledge, error in construction, unforeseen changes, lack of resources, financial /contractual issues[9] Note that the word claim does not appear in the text of clauses time, for an assertion of entitlement of additional payment. More of the claim can be identified to two origins such an error in the contract document; stakeholder engaged with a project, change condition [10] has found that the most common causes for a claim are design change and error, extra work. A survey study was [20] concluded that the most common causes of claims are increasing in scope, weather condition, and acceleration [20] [21] List some other well-known reason that claim may arise, such as inadequate bid information, fault in drawing and specifications. [15] based on ninety-one projects, the most crucial source of claims include clear or inadequate documentation, inclement weather, time extension assessment. [11] Listed the causes of claims due to ambiguities in the contract document, delay in payment, and change of scope.

This research explored the reason for the claim in the residential project and to recognize factors influencing the claim. To ensure the objective of this research achieved by using a questionnaire survey used to collect the data. The requirement of managing the claim construction is related to all professionals (consultant, contractor, and client) in the construction industry

III. QUESTIONNAIRE STRUCTURE

The questionnaire divided into two categories**. CategoryI** involves the detail about the project and organization to get theinformation about the construction project. The question related to Name of the project, Project value, Start date, Type of project control and End date of the project, etc. **Category II** involves forty-seven claim factors were identified from literature studies and consulting with some practitioners. These forty-seven factors (i.e.) Category II divided into four subdivisions such as factors related to the contractor, client, consultant, and general categories. The first section (contractor related problem) involves fourteen claim factors such as planning and management, contractual claim, execution error by the contractor. The second section (consultant related problem) involves ten claim factors such as delay in design delivery, site management, and supervision, the dispute in bill settlement. The third section (client-related problem) contains ten factors such as payment to contractors, incomplete design, delay in approval, excessive change ordered, etc. The fourth section (general factor) contains ten factors such as weather condition, unforeseen ground condition , proper cash flow, sudden change in economic, etc., Using the five-point Likert scale [21],where the range from one to five (1-very low, 2-low, 3-medium, 4-high, 5-very high).

IV. DATA COLLECTION

Questionnaire data distributed around 140 residential projects, but we have received a response from 100 companies out of 140. We received the data from 44 engineers, 18 owners, 22 contractors, 16 consultants on residential as well as commercial projects. They gave the data depending on their experiences, present claim issues in the constructions. These responses were separated based on experience and their position in construction.

V. DEMOGRAPHIC PROFILE

Table I: Demographic profile

S. NO.	DEMOGRAPHIC PROFILE	CATEGORY	NO. OF RESPNT	PERCENTAGE
1.	Experience in construction field	1-5yrs	27	26.7
		5-10years	25	24.7
		10-20 years	23	22.7
		>20 years	26	25.7
2.	Job category	Engineer	45	44.5
		Owner	18	17.8
		Proprietor	16	15.8
		Contractor	22	21.7
3.	Type of project undertaken	Residential	54	100
		Commercial	46	

VI. DATA ANALYSIS

The data analysed using statistical tools like SPSS (Statistical Package for Social Science) and MS Excel. SPSS is a software package utilised for leading statistical analysis, controlling the data and creating the tables and charts that condense data. SPSS performs statistical analysis run from fundamental descriptive statistics such as factor analysis. Frequency analysis is a descriptive statistical package that shows that the number of events of each response picked by the respondents. We can likewise compute the sum mean median mode etc.

The gathered data was entered, worked and examined by utilizing the essential standard of statistics. The data was taken care of into required information by simplifying and understanding the appropriate response from the filled-out questionnaire.In the below table the sum is the total number of weighting given by each respondent and RII value calculated by using the formula

$$RII = \frac{\square^{W}}{N \times A}$$

Where RII =Relative Importance Index: ∑w = weighting given by each respondent: N = Number of responses received: A= Highest weight (1 to 5). The rank was assigned based on the RII value.

Table II: Scale of Importance

Scale of Importance	Scale Value
1	Very Low
2	Low
3	Medium
4	High
5	Very High

Table III: Ranking for Contractor Related Factors

S.NO	DESCRIPTION	SUM	RII	RANK
1	Quality of contractor's work	363	0.712	1
2	Planning and Management	340	0.672	2
3	Delay in progress if any Variation order	327	0.654	3
4	Complex execution of project	322	0.635	4
5	Unexpected changes in exchange, interest and inflation rates	317	0.623	5
6	Contractual claims (extension of time with cost)	313	0.617	6
7	Financial control and wastage on site	308	0.605	7
8	Execution error by contractor.	308	0.605	7
9	Shortening of contract period	307	0.602	8
10	Lack of staff experience and execution by contractors	302	0.594	9
11	Cash flow and financial difficulties by contractors	299	0.591	10
12	Incomplete contract document and their discrepancies	295	0.585	11
13	Provision of BOQ & dispute during bill settlement	294	0.582	12
14	Lack of control over sub-contractor	291	0.571	13

The major five factors that should affect the construction from the contractor's sides are

1. Quality of contractor's work
2. Planning and Management
3. Delay in progress if any Variation order
4. Complex execution of the project
5. Unexpected changes in exchange, interest and inflation rates

A. *FREQUENCY TABLE:*

(Where F- Frequency, P-Percentage, VP- Valid Percentage, CP- Cumulative percentage)

Table IV: Frequency Table Quality of Contractors Work

QUALITY OF CONTRACTOR'S WORK				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	20	19.0	19.0	19
Low	21	21.0	21.0	40
Medium	20	20.0	20.0	60
High	26	26.0	26.0	86
Very high	14	14.0	14.0	100
TOTAL	101	100	100	

Table V: Frequency for Planning and Management

PLANNING AND MANAGEMENT				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	13	13	13	13
Low	10	9	9	22
Medium	25	25	25	47
High	31	31	31	78
Very high	22	22	22	100
TOTAL	101	100	100	

Table VI: Frequency For Delay In Progress If Any Variation Orders

DELAY IN PROGRESS IF ANY VARIATION ORDER				
VALID	F	P (%)	VP (%)	CP (%)
Very low	12	12	12	12
Low	18	17	17	29
Medium	24	24	24	53
High	26	26	26	79
Very high	21	21	21	100
TOTAL	10	100	100	

Table VII: Frequency for complex execution of project

COMPLEX EXECUTION OF PROJECT				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	10	9	9	9
Low	21	21	21	30
Medium	26	26	26	56
High	27	27	27	83
Very high	17	17	17	100
TOTAL	101	100	100	

Table VIII: Frequency for Unexpected Changes in Exchange, Interest and Inflation Rates

UNEXPECTED CHANGES IN EXCHANGE, INTEREST AND INFLATION RATES				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	13	13	13	13
Low	16	16	16	29
Medium	29	29	29	58
High	25	25	25	83
Very high	18	17	17	100
TOTAL	101	100	100	

B. *DESIGN CONSULTANT RELATED*

Table IX: Ranking for Design Consultant Related

S.NO	DESCRIPTION	SUM	RII	RANK
1	Difference between design and actual quantities	332	0.652	1
2	Contacts and ambiguities	325	0.641	2

3	Site management	322	0.634	3
	and supervision			
4	Relationship between site management and execution team	317	0.622	4
5	Lack of coordination between construction parties	304	0.608	5
6	Delay of shop drawing approval	304	0.605	5
7	Complete design and specs	301	0.597	6
8	Delay in design delivery	301	0597	6
9	Dispute on bill settlement	298	0.591	7
10	Termination of contract and suspension of work by one party	295	0.586	8

The major five factors that should affect the construction from design consultant sides are

1. Difference between design and actual quantities
2. Contacts and ambiguities
3. Site management and supervision
4. Relationship between site management and execution team
5. Lack of coordination between construction parties

C. *FREQUENCY TABLE*

Table X: Frequency for Difference Between Design And Actual Quantities

DIFFERENCE BETWEEN DESIGN AND ACTUAL QUANTITIES				
VALID	**F**	**P(%)**	**VP(%)**	**CP(%)**
Very low	11	11	11	11
Low	13	12	12	23
Medium	29	29	29	52
High	30	30	30	82
Very high	18	18	18	100
TOTAL	101	100	100	

Table XI: Frequency For Contact And Ambiguities

CONTACT AND AMBIGUITIES				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	14	14	14	14
Low	8	7	7	21
Medium	36	36	36	57
High	26	26	26	83
Very high	17	17	17	100
TOTAL	101	100	100	

Table XII: Frequency For Site Management And Supervision

SITE MANAGEMENT AND SUPERVISION				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	11	10	10	10
Low	18	18	18	28
Medium	27	27	27	55
High	30	30	30	85
Very high	15	15	15	100
TOTAL	101	100	100	

Table XIII: Frequency For Relationship Between Design And Actual Quantities

RELATIONSHIP BETWEEN DESIGN AND ACTUAL QUANTITIES				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	10	10	10	10
Low	17	17	17	27
Medium	30	30	30	57
High	33	32	32	89
Very high	11	11	11	100
TOTAL	101	100	100	

Table XIV: Frequency Table For Lack of Coordination Between Construction Parties

LACK OF COORDINATION BETWEEN CONSTRUCTION PARTIES				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	14	14	14	14
Low	23	23	23	37
Medium	21	21	21	58
High	29	29	29	87
Very high	14	13	13	100
TOTAL	101	100	100	

D. *CLIENT RELATED AND ITS FREQUENCIES*

Table XV: Ranking of Client Related Factors

S.NO	DESCRIPTION	SUM	RII	RANK
1	Funds arrangement and cash flow	340	0.673	1
2	Change the order during construction and market inflations	329	0.654	2
3	payment to contractor	321	0.642	3
4	A long line of authority on owner organization	319	0.633	4
5	Ignoring items with abnormal rates (tender evaluation)	319	0.633	4
6	Excessive changes in order and frequent design change	314	0.626	5
7	Change of scope of work and additional work	305	0.605	6
8	Delay in approval of completed work	305	0.605	6
9	Incomplete design at the time of tender	289	0.582	7
10	Omission and error of BOQ & Incomplete tender document	287	0.575	8

The major five factors that should affect the construction from client sides are

1. Funds arrangement and cash flow
2. Change the order during construction and market inflations
3. Payment to contractor
4. The long line of authority on owner organization
5. Ignoring items with abnormal rates (tender evaluation)

E. *FREQUENCY TABLE*

Table XVI: Frequency For Payment To Contractor

LONG LINE OF AUTHORITY BY OWNER ORGANISATION				
VALID	**F**	**P(%)**	**VP(%)**	**CP(%)**
Very low	14	14	14	14
Low	15	15	15	29
Medium	21	21	21	50
High	38	38	38	88
Very High	13	12	12	100
TOTAL	101	100	100	

Table XVII: Frequency for Long Line of Authority

PAYMENT CONTRACTOR				
VALID	**F**	**P(%)**	**VP(%)**	**CP(%)**
Very low	9	9	9	9
Low	22	22	22	31

Medium	26	26	26	57
High	25	25	25	82
Very High	19	18	18	100
TOTAL	100	100	100	

Table XVIII: Frequency For Fund Arrangement And Cash Flow

FUND ARRANGEMENT AND CASH FLOW				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	12	12	12	12
Low	11	11	11	23
Medium	23	23	23	47
High	31	31	31	78
Very high	23	22	22	100
TOTAL	101	100	100	

Table XIX: Frequency For Ignoring Items With Abnormal Rate (Tender Evaluation)

IGNORING ITEMS WITH ABNORMAL RATE (TENDER EVALUATION)				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	13	13	13	13
Low	18	18	18	31
Medium	23	23	23	54
High	29	29	29	83
Very high	18	17	17	100
TOTAL	101	100	100	

VII. GENERAL FACTORS AND ITS FREQUENCIES

Table XX: Ranking for General Factors and its Frequencies

S.NO	DESCRIPTION	SUM	RII	RANK
1	Unexpected changes in material price	327	0.645	1
2	The high cost of labor and transportation	325	0.643	2
3	Sudden changes in economic and market condition	316	0.625	3
4	Proper cash flow during construction	314	0.621	4
5	Problem with neighbors around the site	313	0.619	5
6	Unforeseen ground condition	313	0.619	5
7	Unexpected changes in exchange, interest and inflation rate.	306	0.605	6
8	Change in government regulations and laws	291	0.576	7
9	Weather conditions	290	0.574	8
10	Insufficient utilities available on site (electricity, water etc..,)	279	0.552	9

The major factors that should affect the construction are

1. Unexpected changes in material price
2. The high cost of labour and transportation
3. Sudden changes in economic and market condition
4. Problem with neighbours around the site

A. FREQUENCY TABLE

Table XXI: Frequency For Unexpected Changes In Material

UNEXPECTED CHANGES IN MATERIAL PRICE				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	9	9	9	9
Low	21	21	21	30
Medium	26	26	26	56
High	22	22	22	78
Very high	22	22	22	100
TOTAL	101	100	100	

Table XXII: Frequency For Sudden Changes In Economic And Market Conditions

SUDDEN CHANGES IN ECONOMIC AND MARKET CONDITIONS				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	11	11	11	11
Low	20	20	20	31
Medium	26	26	26	57
High	28	28	28	85
Very high	16	15	15	100
TOTAL	10	100	100	

Table XXIII: Frequency For Problem With Neighbour Around The Site

PROBLEM WITH NEIGHBOUR AROUND THE SITE				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	9	9	9	9
Low	17	17	17	26
Medium	40	40	40	66
High	20	20	20	86
Very high	14	14	14	100
TOTAL	100	100	100	

Table XXIV: Frequency For High Cost of Labour And Transportation

HIGH COST OF LABOUR AND TRANSPORTATION				
VALID	**F**	**P (%)**	**VP (%)**	**CP (%)**
Very low	8	8	8	8
Low	13	13	13	21
Medium	41	41	41	62
High	22	22	22	84
Very high	16	16	16	100
TOTAL	100	100	100	

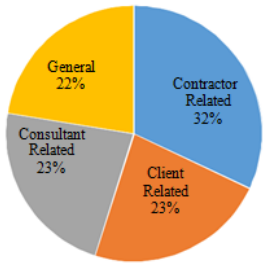

Fig 1: Response rate

VIII. RESULT AND DISCUSSION

The study identified and ranked the five most critical claim factors out of 44 selected claim factors. The factors classified into four different phases of construction. The highest frequency and impact of events justifying the right to claim on contractors, consultant and client-side and general are

- Quality of contractor's work Planning and management
- Fund arrangement and cash flow\
- Change the order during construction and market inflation
- Site management and supervisions

This study explored and ranked the causes of the claim. The above five factors are the major reason for the occurrence of the claim. The RII value for every five factors is the quality of the contractor's work is 0.712. This is the highest value when compared to the other four. The next one is planning and management; the RII value is 0.673. This is the second leading factors. The third one is fund arrangement and cash flow the RII Value is 0.673. The fourth one is changing the order during construction and market inflation; its RII value is o.651. The final one is site management and supervision; its RII value is 0.631.

The above five factor's relative importance value is more when compared to the other thirty-nine factors.

In this study, all the forty-four factors are depending on each other. We had to rectify these factors out of 39 factors. Surely some factors index or impact of that factor will be reduced in construction.

IX. CONCLUSION

Claims are the biggest challenges in meeting the construction industry nowadays. Finding the root cause is the first step to avoid the claim. This study aimed at identifying and ranking the causes of claims according to their relative importance in the construction industry. The study findings of the first thing are reasons for claims caused by owners, the second thing is reasons for a claim caused by the contractor, and the third thing is reasons for a claim caused by the client). This study is finding the main causes of the claim and understanding the claim and how to avoid the claim during construction. From the investigation, it is fitting that contractual workers select a decent venture supervisor who has a suitable involvement in development venture usage and learning of development guarantee. The undertaking arranging and configuration organize proprietors need to expand mindfulness inside the nearby network about the advantages of the construction project to keep away from obstruction from neighborhood occupants amid the task execution organize. It should be possible through leading formal reviews and workshops. Proprietors need to help contractual workers all the more viable in evacuating obstructions so a project can be actualized without deferrals. At long last, there must be a near-by collaboration between the contracting gatherings to control, limit and keep away from explanations behind cases happening on development ventures. This is the important to diminish reasons for cases and as needs is limiting postponements and cost overwhelms on development ventures. The discoveries introduced in this examination give some direction and data that directors and industry specialists can use to deal with their tasks.

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