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# Attribute Hierarchy of Conflicts in Construction Projects: A Case Study of Sindh

SHABIR HUSSAIN KHAHRO\*, FAREED AHMED MEMON\*\*, AND MIR AFTAB HUSSAIN TALPUR\*\*\*

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## ABSTRACT

Conflicts seem to arise throughout the life cycle of the construction project and in result, these may lead to several other issues such as project cost overrun, time overrun, productivity loss, loss of profit and above all damage of business relationships in general and specifically in construction industry. Hence, this paper focuses on various direct and indirect causes leading to conflicts in construction industry of Sindh, Pakistan. Detailed literature review and interviews have been carried out to identify several direct and indirect causes of conflicts and finally, a set of questionnaire has been designed and distributed to get expert opinion on the significance of these causes in this sector. The data has been analyzed by RIW (Relative Importance Weight) method. The outcome of this study shows that payment delay is the major direct cause of conflicts in the construction projects followed by contractual claims, public interruption, poor communication and site conditions. Thus, it is suggested that proper attention should be given to the above mentioned concerns so as to have a uniform flow of construction project life cycle without any interruption.

**Key Words:** Conflict, Relative Importance Weight, Conflict Resolution Approach.

## 1. INTRODUCTION

Construction industry is termed as a project based industry due to association of the stakeholders during entire project life cycle and varying distinct characteristics of different projects. Disputes and conflicts do occur due to diversity of industry nature and relations of different parties [1-2]. It has been observed that issues related to payment, communication, public interruption etc can create a serious conflict between different parties involved in any project. Conflicts not only occur in local construction industry but these are also observed worldwide in public and

private sector projects leading to loss of profit, damage of business relationships, delay of project, cost overrun of project and productivity decrement [3].

Conflicts may occur at any phase of the project and affect the performance of various stakeholders [4]. The success of a project is certainly depends on the performance of these stakeholders. Project cost, quality and timeliness depends on several factors. Three main construction players of this industry including client, consultant and contractor work in continuous collaboration to achieve

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\* Lecturer, Department of Engineering Management, Prince Sultan University, Kingdom of Saudi Arabia.

\*\* Assistant Professor, Department of Civil Engineering, Mehran University of Engineering & Technology, Jamshoro.

\*\*\* Ph.D. Research Scholar, Department of Civil Engineering, Universiti Teknologi PETRONAS, Malaysia.

the project objectives. Meanwhile, client has been found in obtaining the possible economical quality structure mostly. Designers design for client via detailed drawings and specifications. Detailed designs including drawings and specifications are prepared by the designer; though the more creativity of the designer may result in higher cost and construction time. While contractor want to complete the project with minimum time to save his profit margin [5-6]. Now in such an environment, conflicts do occur. Hence, this paper focuses on the identification of causes for such conflicts in the construction industry specifically for the projects in province of Sindh, Pakistan. Indeed, several conflicts remedial techniques have been developed throughout the world but still there is less effectiveness in their application and lack of resolution of the conflicts in the project life cycle in the construction industry of the developing countries including Pakistan. Thus, this study has been carried out in context of construction industry in developing countries as conflict management system must be reviewed and strengthened to resolve any conflicts in the project [7]. Considering this discussion, this paper has been materialized to evaluate the professional's point of views with respect to their experience and expertise in planning a conflict management plan and suitable conflict resolution approaches to resist such conflicts happen in upcoming projects of this industry.

## **2. PROBLEM STATEMENT**

Project manager always want their projects to be completed successfully. Therefore, completion of the projects within the stipulated cost and time, along with the proper plan, design and quality of construction is important. Whereas, it has been analyzed that the way you deal conflicts in the construction projects is very important. As it is said prevention is better than cure, so it's better to deal with the conflicts in an efficient manner so the project is ended successfully. Hence, it is important to identify the causes resulting in conflicts during the construction projects specifically in the context of construction industry of Sindh, Pakistan.

## **3. SIGNIFICANCE OF RESEARCH**

Usually a successful project is the one, which is properly planned, designed, executed and handed over to the client within the anticipated time and cost. There can be other factors also governing the success of the project and one of the important factor is the smooth execution of the project fulfilling the agreed upon commitments within the stakeholders. As a part of this, it is important to analyze the strategy through which the conflict is faced by the project team, which otherwise may affect the project.

This study will help the construction managers to make the necessary arrangements and take decisions to deal with the conflicts normally occur in any construction project. Looking at the causes of it, they will be in good position to make informed decisions for their projects. This will also help the managers to take remedial measures in their upcoming projects to avoid such unwanted practices.

This paper also highlights few of the resolution approaches to deal with conflicts in the construction industry. This causal identification will help them to quickly respond to that particular conflict so that corrective action may be taken accordingly.

## **4. METHODOLOGY**

### **4.1 Data Collection and Analysis**

Extensive literature review has been carried out to acknowledge several types and reasons of conflicts taking place in the construction industry. Expert opinion was acquired by a set of questionnaire. The respondents were asked to rank the significance level of the causes on a likert scale. Various modes were adopted to get the opinion from different experts working in various departments and companies. Finally, the data has been analyzed through RIW method.

## 4.2 Respondents Experience

The questionnaires were sent to various public sector department and private sector companies. A total number of 200 questionnaires were sent via email and post. Total 80 questionnaires were received successfully. Fig. 1 shows the questionnaire contribution from different sectors.

The questionnaires were sent to top management of the departments and companies including project managers, resident engineers, executive engineers and others. To

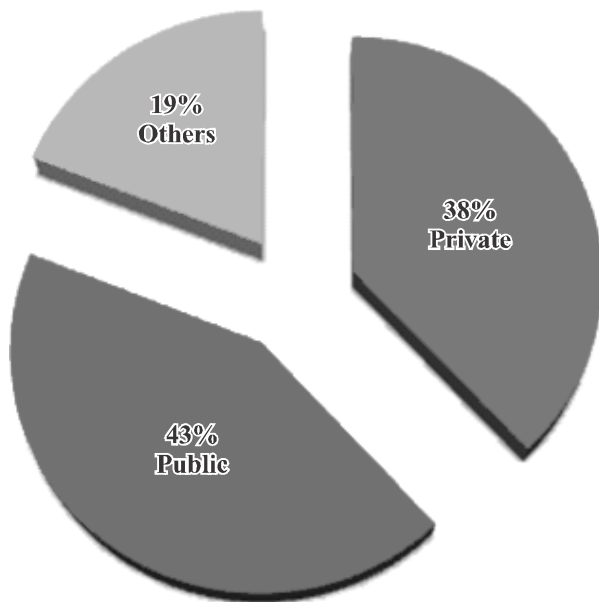


FIG. 1. QUESTIONNAIRE CONTRIBUTION FROM DIFFERENT SECTORS

get such important opinion, respondent experience level working in this field was of great concern. Fig. 2 shows the experience level of the respondents.

## 5. RESULTS AND DISCUSSION

As discussed earlier, the data has been analyzed using relative importance weight method. The rank to the causes has been assigned on their overall average weight age. Table 1 shows the statistics of the complete analysis. The direct causes are placed as per their weight, higher is at the top followed by its indirect causes with their average mean score and rank.

It has been analyzed that payment delay is the major direct cause of conflicts in the construction projects followed by contractual claims, public interruption, poor communication and site conditions. Whereas, lack of funds, lack of resources for proper site investigation, poor financial projections by client and unnecessary official procedure in the payment process are the major indirect causes of the conflicts in the construction projects of Sindh followed by others as shown in Table 1.

Though, the focus of this research was to identify the root causes of the conflicts in the construction projects but this research also highlights the resolution approaches collected from detailed literature review [8-9] to deal with such contradictory situation in the construction projects. Table 2 shows these resolution measures as per their significance in this industry.

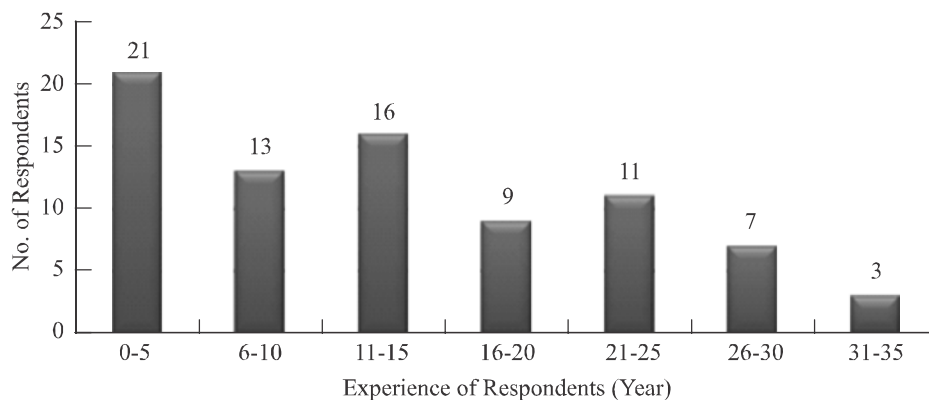


FIG. 2. RESPONDENTS NUMBER AND EXPERIENCE

TABLE 1. CAUSES OF CONFLICTS

Conflict Groups			
Direct	Payment Delay	Mean	Rank
Indirect	Lack of funds	3.12	1
	Poor financial projections by client	3.08	2
	Unnecessary official procedure in the payment process	3.02	3
	Excessive claims made by contractor	2.94	4
	Inadequate contract provision for enforcement of timely payment	2.58	5
	Delays originating from evaluation process of the contractor's by consultant	2.55	6
Direct	Contractual Claims	Mean	Rank
Indirect	Unclear risk allocation	2.75	1
	Poor contract administration	2.54	2
	Inappropriate contract type	2.48	3
	Inadequate contract document	2.24	4
	Incomplete tender information	1.98	5
Direct	Public Interruption	Mean	Rank
Indirect	Inequitable compensation for displaced people	2.78	1
	Dialogue gap between the project management and public	2.62	2
	Project involves displacement of people	2.58	3
	Public resistance due to pollution of the environment	2.52	4
	Non adherence to public authorities	2.44	5
Direct	Poor Communication	Mean	Rank
Indirect	Poor feedback system	2.7	1
	Negligence	2.65	2
	Deliberate blockage of information flow	2.64	3
	In effective means of communication	2.55	4
	Lack of communication procedures	2.38	5
	Non adherence of communication procedure set	2.34	6
Direct	Site Conditions	Mean	Rank
Indirect	Lack of resources for proper site investigation	3.11	1
	Lack of knowledge of site conditions	2.98	2
	Superficial investigation of site conditions	2.88	3
	Carelessness of site investigator	2.87	4
	Ignorance of client and consultant on site investigation	2.77	5
	Wrong interpretation of site investigation	2.74	6
Direct	Contract Variations	Mean	Rank
Indirect	Change in work scope by client	2.91	1
	Change in work scope due to design errors	2.78	2
	Misinterpretation of contract information	2.65	3
	Errors in bill of quantities	2.527	4
	Errors in drawings	2.523	5
	Errors in specifications	2.521	6
Direct	Improper Project Documents	Mean	Rank
Indirect	Personnel incompetency in project documentation	2.7	1
	Personnel lack of experience in preparation of documents	2.61	2
	Low consultancy fee	2.5	3
	Negligence	2.45	4
	Inadequate time for document preparation	2.28	5
Direct	Design Errors	Mean	Rank
Indirect	Cheap design hired	2.62	1
	Inadequate brief	2.60	2
	Wrong design data	2.56	3
	Incompetent designer	2.56	3
	Inexperienced designer	2.141	4
	Misinterpretation of client's requirements by the designer	2.140	5
Direct	Difference in Evaluations	Mean	Rank
Indirect	Dubious claims by contractors	2.82	1
	Tendency of contractor claiming high prices	2.74	2
	Profit making or loss balancing approach of the contractor	2.72	3
	Unclear method of pricing in the contract	2.58	4
	Tendency of consultants/clients under-valuing	2.58	5
Direct	Multiple Meaning of Specifications	Mean	Rank
Indirect	Cut and paste tendency	2.77	1
	Complicated project	2.55	2
	Vested interest	2.54	3
	Inexperienced specification writer	2.52	4
	Use of out-dated specifications	2.51	5
	Negligence	2.41	6
Direct	Cultural Differences	Mean	Rank
Indirect	Working norms problems	2.30	1
	Adversarial industry culture	2.229	2
	Professional cultural problems	2.221	3
	Language problem	2.07	4

Collaboration and Compromising are the two major resolution approaches used to lead with such conflicts in the construction projects in Sindh. Whereas, other approaches like smoothing, avoiding and arbitration are also used in certain cases but it depends on the nature of the parties involved in that particular project. It is also analyzed that the last hope to resolve such conflicts for a time period is by forcing approach, which is very rarely used.

## 6. CONCLUSION

This study was carried out to identify direct and indirect causes of conflicts in construction projects of Sindh. The results of the study indicate that payment delay, contractual claims, public interruption, poor communication and site conditions are the major direct causes of conflicts, which may affect the projects and may influence the performance of the project stakeholders. The results of the study also indicate that lack of funds, lack of resources for proper site investigation, poor financial projections by client and unnecessary official procedure in the payment process are the major indirect causes of the conflicts, which may affect the projects and may influence the performance of the project stakeholders. It has been observed that timely arrangement and withdrawal of payment is the cause for conflicts in the projects in construction industry of Sindh followed by other issues as discussed.

TABLE 2. CONFLICT RESOLUTION APPROACHES

Conflict Resolution Approach	Mean	Rank
Collaboration	3.2	1
Compromising	3.1	2
Smoothing	2.8	3
Avoiding	2.5	4
Arbitration	2	5
Forcing	1.8	6

## 7. SUGGESTION

It is suggested that attempts should be made as early as possible to deal with the conflicts in an effective manner. Proper financial management, contractual documentation and stakeholders involvement is necessary in the project to avoid conflicts.

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