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EXPLORING CRITICAL CONFLICT ISSUES BETWEEN PUBLIC OWNERS AND CONTRACTORS DURING CONSTRUCTION PHASE

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ABSTRACT

The conflict in the construction projects seem inevitable and are increasing in the construction industry due to its uncertainty, complexity nature, and involvement of different categories of project participants. Conflict brings breakdown of relationships between project participants and results to project delays, claims and disputes which are the main shortcomings in completion of the project within objectives and goal. The previous studies have explored the factors and attempted on management of conflicts in project; however these studies rarely explain specific issues of conflict and identified them. Hence, explicit study on identification of conflict issues is essential. Therefore, the objective of this study is to identify the critical conflict issues between public owners and contractors during construction phase in public projects. The research methodology is adopted based on questionnaire survey focusing public owners and contractors. The findings come up with several conflict issues related to project time, cost, quality, safety, scope and personnel. The results can be useful for construction practitioners by taking alternate approaches for reducing the bad consequences of construction conflict.

Keywords: Conflict Issue, Project Relationship, Public Projects, Project Management.

1. INTRODUCTION

Conflict in construction project is defined as non-conformance with the procedures or techniques or a situation in which two or more people appear to be incompatible on objectives, goals and priorities (Gardiner and Simmons 1992). It had also been perceived as disagreement and opposition between people about something relating to individual's interests, beliefs, ideas, goals and needs (Hellard 1988). Handy 1983, Brown and Marriot (1993) have defined a conflict as a situation when one person finds the other has discouraged and become frustrated or non-cooperative because of contradiction among objectives, priorities and accomplishment of goals. From those various definitions and views on conflict it can be understood that conflicts are always part of occurrence in construction project.

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As conflict in construction project is perceived as dysfunctional and acknowledging the importance of management, many researches explored on conflict management in construction industry. The previous researchers have attempted to explore the causes and factors of conflicts and elaborated on application of various conflict resolutions and avoidance strategies in construction projects (Sedairy 1994; Acharya et al. 2006; Stanslaus 2011). Although, previous researches might have contributed great help, but conflict still occurs and it is challenging to reduce in construction projects.

2. PROBLEMS STATEMENT

The main reasons are that previous researches have not focused on specific conflict issues. Instead previous researchers have focused on identification of causes and factor. Researches (Stanslaus 2011; Sedairy 1994) were focused on conflict resolution and avoidance approaches directly in trying to reduce conflicts. Even, previous research lacks clear categories of causes, factors and areas of conflicts. This means that causes and factors might be just the problems and not conflict. Moreover, the previous research has not explored specific conflict issues related to time, cost, quality and safety in construction. This shows that specific conflict issues needs to be focused and explored to reduce the conflicts with the framework of conflict measurement.

If the conflict issues are studied specifically, it will give better understanding of the conflicts in particular. This is because project participants should have a clear picture of a conflict when faced with any issues (Thomas 1994). Further, if specific conflict issues related to time, cost, quality and safety in construction are explored, the conflict may able to reduce in better ways. Because the underlying issues that usually have conflicts in construction are mainly due to time, cost, quality and safety when public owners and contractors considered as main objectives (Fenn and Gameson 1991; Kumaraswamy 1998). The causes and its sources can also be traced in meaningful and justifiable way if the conflict issues that occur during constructions are acknowledged specifically. So that realistic and appropriate solutions can able to apply to reduce conflicts by analyzing the actual causes and its sources. Even the application of various resolution and prevention strategies becomes purposeful and can be applied in realistic manner if we have clear understanding of conflict and its underlying specific issues. On the contrary, it may not be satisfactory to reduce conflicts by the methods of previous researches. Because all their identified causes and factors may

not lead to conflicts since it revealed in general areas (Thomas 1994). Even if so, it might have difficulties to actually recognize the real reasons for conflict without understanding the issues. Without understanding the actual issues, it might have difficulties to apply appropriate solutions to reduce the conflicts. So, having witnessed its needs and limitations from past researches, the need of upcoming research study of conflicts in construction is essential.

Therefore, in view of the conflict situations in construction project, it becomes important to be addressed. If the conflict issues are not addressed, it will result in high level of conflict. Conflict situations depend on objectives, goals, plans, methods, and personalities that may lead into disputes and court of law (Walker 1996). Such intensifying situation would involve people, additional time and higher costs (Loosemore et al. 2000; Harmon 2003). Besides being lost of time and money, it can damage relationships and effects on subsequent duties and responsibilities once it proceeds to court of law. Conflicts in projects are cited by number of writers such as Walker 1996, Fenn et al.1997; Kumaraswamy 1998; Loosemore et al. 2000; Harmon 2003; Ankrah and Langford 2005; as one of the factors that damage project success and relationships. Various issues may lead to conflicts whereas some are more inflexible and susceptible to worst situation than any others. Although conflicts cannot always be fully resolved, there are often some spaces for conflict that can be reduced (Fenn et al.1997). Therefore, the way in which the conflict issues can be structured and managed is important (Walker 1996; Fenn et al. 1997). Hence, this research paper is endeavored to explore critical conflict issues related to time, cost, quality, safety, scope and personnel in construction project that are perceived by public owners and contractors.

3. RESEARCH METHODOLOGY

This research was done in following steps: 1) Reviewing literature; 2) Collecting information from experts in respect to explore the conflict issues in public projects related to project time, cost, quality, safety, scope and personnel; 3) Analyzing the collected issues from step 2 to find most relevant and important issues of conflicts between public owners and contractors during construction phase; 4) Finding the strategies to solve the important conflict issues found in step 3 and 5) Concluding the study.

Since, the aim of the research was to explore the critical conflict issues between public owners and contractors during construction phase, quantitative and qualitative approach was endeavored. Accordingly, the questionnaire survey method was found to be the preferred method of this research, as it studied contemporary experiences of the respondents involved in the public projects. The data collection was done through questionnaire from 78 respondents (45 public owners and 33 contractors) with 23% having less than 5 years of experience, 44% in 5-10 years' experience and 33% had experience of more than 10 years in civil engineering field. Data collected were analyzed using SPSS 19 software.

4. DATA ANALYSIS AND RESULT INTERPRETATION

This research also attempted to determine whether the public owners and contractor's perceptions on the importance of conflict issues are different or not. Therefore to determine this, independent samples t-test analysis was performed using SPSS 19 software. The important conflict issues for commonly perceived items was retained which have overall mean values of greater than 3.50 and issue having significant different in their perceptions was retained which have separate mean values above 3.50 from each group. This was performed to check whether the top ten important issues that were selected for further analysis would fall on which categories.

4.1. Common Conflict Issues Result and Interpretation

From analyzing the important conflict issues between public owners and contractors, fifteen issues are found to have common (no differences) in their perceptions. These common perceived issues by both parties are discussed, as shown in Table 1 below.

Table 1: Summary of Common Perceived Important Conflict Issues

No	Common Conflict Issues (>3.5)	Mean		T-test value	Overall mean	Group	Rank
		Owner	Contractor				
1	Inadequate supervision, regular inspection or verification on construction site is important conflict issue related to project quality.	3.93	3.67	0.238	3.82	Quality	1
2	Non-compliance with occupational health & safety regulations is important conflict issue related to project safety.	3.78	3.79	0.952	3.78	Safety	2
3	No first aid & lifesaving appliance at construction site is important conflict issue related to project safety.	3.56	3.91	0.067	3.71	Safety	3
4	Slow decision making by client is important conflict issue related to project time.	3.62	3.79	0.463	3.69	Time	4
5	Excessive variations of quantity are important conflict issue related to project scope.	3.76	3.61	0.428	3.69	Scope	4
6	Late approval or permit from regulators (road permit, environmental clearance, building, municipal permit or approval etc.) is important conflict issue related to project time.	3.84	3.36	0.082	3.64	Time	5

7	Irresponsibility/ Lack of commitment/ attitude & personality problem are important conflict issue related to project personnel.	3.64	3.64	0.966	3.64	Personnel	5
8	A different perception on work quality acceptance is important conflict issue related to project quality.	3.58	3.70	0.534	3.63	Quality	6
9	Frequent change orders cause extra cost of work preparation or rework is important conflict issue related to project scope.	3.69	3.52	0.451	3.62	Scope	7
10	Time extension due to design changes is important conflict issue related to project time.	3.64	3.55	0.697	3.60	Time	8
11	Lack of clear information to address the price escalation index is important conflict issue related to project cost.	3.49	3.75	0.154	3.60	Cost	8
12	Ambiguous instructions and unqualified/unskilled operators or workers are important conflict issue related to project quality.	3.64	3.52	0.541	3.59	Quality	9
13	Pollution during constructions and affect to environment (Non-compliance with environmental rules and regulations) is important conflict issue related to environment.	3.69	3.45	0.189	3.59	Environment	9
14	Late payment by client is important conflict issue related to project cost.	3.44	3.70	0.239	3.55	Cost	10
15	An error in contract document & violating terms & conditions of contract is important conflict issue related to project contract.	3.53	3.58	0.801	3.55	Contract	10

The first most common important conflict issue perceived by both public owners and contractors was related to project quality (inadequate supervision, regular inspection or verification on construction site) with overall mean value of 3.82. The reason could be because both parties realized that to achieve satisfactory quality required regular inspection and verification at project sites by the team. Second and third common perceived item was on safety issues. Both parties has

agreed on “Non-compliance with occupational health & safety regulations” and “No first aid & lifesaving appliance at construction site” as important conflict issues with overall mean values of 3.78 and 3.71 respectively. This issue has become prominent one in construction industry with the rising cases of accidents and its liabilities. Fourth common issue was related to project time in which slow decision making by client has been perceived by both parties as important conflict issue that faced during construction stage of any public projects with the overall mean value of 3.69. This is because the quick decision and discharge of the work responsibilities and duties to concerned in-charge of the project would immensely save time and keep updated with the construction scheduling and monitoring process. However, this has not happening in public projects when it has to undergo and rooted from the long procedures and administrative systems which has even agreed by the public owners as high importance. The issue “Excessive variations of quantity such as requiring massive earth excavation are important conflict issue related to project scope” with 3.69 has also been ranked in fourth position. Both parties has perceived this item as important conflict issue because the scope changes from original scope of works would results in deviations that involve time extension and extra payment to be arranged by owner which are not easy to settle amicably between them. Fifth, “Late approval or permit from regulators is important conflict issue related to project time” and “Irresponsibility/ Lack of commitment/attitude & personality problem are important conflict issue related to project personnel” with overall mean value of 3.64. Both the parties has perceived these issues, however during course of construction late response from regulators despites it’s constant follow-ups and reminders would definitely cause delay in the project. This issue causes to conflict situations between them. In addition, both parties wanted project personnel who take with good sense of responsibility and ownership, personality who take risk and commitment to achieve project success and maintain good relationship.

4.2. Interpretation Significant Different Conflict Issues Result and Interpretation

This section describes the results of important conflict issues that have significant differences in their perceptions of public owners and contractors. Table 2 shows the summary of important conflict issues that have significant differences in their opinion. First, “Lack of detail drawing is important conflict issue related to project quality” has mean value of 4.24 (contractors) and 3.56 (public owners). The contractors have perceived this issue as the top most important one because their completed works are not easily accepted by owner due to quality issue. So, the contractors have claimed that lack of detail drawing is the main reason behind achievement of works with inferior quality. On the other hand, it’s the owner’s responsibility to furnish detail drawings to contractor, however owner has agreed to this issue lower than contractor even though both parties wanted to have good quality of completed projects. Second, “Slow progress/performance by contractor is important conflict issue related to project time” with mean value of 4.24 (public Owner) and 3.15 (contractor) respectively. The public owners have given high importance to this time issue because they have experienced with most contractors performed very slow in work progress and lead to delay of projects. But the contractors have not accepted this issue because it’s their

weakness and might have some reasons if their performance was noticeably slow. Third important conflict issue is the “Poorly develop project planning and scheduling” related to project time. The public owner has perceived this issue with mean value of 4.22 and 3.73 by contractors. The good project planning and scheduling is necessary for any construction but these has not met in actual implementation stage. For this the public owner has agreed although it is their role to have plan the project properly before the work begins. On the other side, specific work plan and scheduling has to be carried out by the contractors during implementation and that’s why the contractor has perceived to have low importance of conflict compared to public owner. Fourth, “Unclear/Incomplete technical specifications are important conflict issue related to project quality” with mean value of 4.07 (Public owner) and 3.67 (Contractor). Public owner has rated higher importance because the technical specifications prepared and supplied are incomplete and affect to the quality when it’s unable to work as per prescribed instructions. The reason could be public owners are not satisfied with the quality as there are no definite specifications prepared to follow that meets specific project requirements. Fifth, “Inadequate quality testing facility is important conflict issue related to project quality” with mean value of 4.07 (Public owner) and 3.09 (Contractor). The public owner perceived this quality issue as important because testing facility is not available adequately in construction industry, whereas the contractor takes advantage for this non-availability of the facilities in place.

Sixth, “Poor workmanship or rework due to non-compliance with methods and good practices is important conflict issue related to project quality” with mean value of 4.04 (Public owner) and 3.58 (Contractor). The reason could be mentioned that both parties are not happy with the current practices and methods which lead to rework or poor workmanship affecting the quality. In addition, the construction methods or practices are still traditional methods without much of technology based. The seventh issue “Non-compliance with quality control/quality assurance system or processes” is also an important conflict issue related to project quality. The public owner (4.04) perceived this because contractor should comply with prepared set of quality control system during construction. On contrary, the contractor (3.06) has not readily agreed to this issue, because they are the one who built and compromise on quality of the works. Eight “An unforeseen underground condition is important conflict issue related to project scope” with mean value of 3.93 (public owner) and 2.82 (contractor). This issue is important because it has difficulties to defined and anticipate adequate geological information and knowledge to be included in contract document in the initial period. Without having this, it encounters unforeseen underground conditions which usually lead to conflicts with contractor during construction due to scopes changes and other related issues. Some contractors play with the quantities due to scope changes and claim for time loss and deliberately delay the work progress. That’s why the contractor perceived to be moderate importance on this issue. Ninth, “Shortage or absence of competent technical, managerial or supervisory personnel at construction site is important conflict issue related to project personnel” with mean value of 3.89 (public owner) and 3.27 (contractor). The owner insists this because the competent technical persons from contractor’s side in most projects will be not available at construction site. But the

contractors manage with most of the non-technical or incompetent persons at site which is not accepted as per contract. Tenth, “Use of low quality & cheap materials are important conflict issue related to project quality” with mean value of 3.87(public owner) and 3.09(contractor). The public owners wanted to meet the products as prescribed but it has faced difficulties to control the quality of construction materials brought at site. On the other hand, the contractor had perceived low importance on these issues because they are the one who supplied materials at site to workers and do not want to test the materials and quality of specimens and samples.

Table 2: Summary of Important Conflict Issues having Significant Differences

No	Significant different Items (>3.5)	Mean		T-test value	Issue	Rank
		Owner	Contractor			
1	Lack of detail drawing is important conflict issue related to project quality.	3.56	4.24	0.003	Quality	1
2	Slow progress/performance by contractor is important conflict issue related to project time.	4.24	3.15	0.000	Time	2
3	Poorly develop project planning and scheduling is important conflict issue related to project time.	4.22	3.73	0.021	Time	3
4	Unclear/Incomplete technical specifications are important conflict issue related to project quality.	4.07	3.67	0.046	Quality	4
5	Inadequate quality testing facility is important conflict issue related to project quality.	4.07	3.09	0.000	Quality	5
6	Poor workmanship or rework due to non-compliance with methods and good practices is important conflict issue related to project quality.	4.04	3.58	0.010	Quality	6
7	Non-compliance with quality control/quality assurance system or processes is important conflict issue related to project quality.	4.04	3.06	0.000	Quality	7
8	An unforeseen underground condition is important conflict issue related to project scope.	3.93	2.82	0.000	Scope	8
9	Shortage or absence of competent technical, managerial or supervisory personnel at construction site is important conflict issue related to project personnel.	3.89	3.27	0.011	Personnel	9
10	Use of low quality & cheap materials are important conflict issue related to project quality.	3.87	3.09	0.002	Quality	10
11	Frequent change orders causes uncontrolled project schedule is important conflict issue related to project scope.	3.53	3.09	0.008	Scope	11

Last issue having significant difference on their perceptions is the “Frequent change orders causes uncontrolled project schedule is important conflict issue related to project scope”. The public owner has perceived this issue with mean value of 3.53 because they don’t want to made changes to their scope of works, which otherwise aspects liabilities and related issues which is not easy to settle. The contractor has perceived with mean value of 3.09 which is quit lower than owner’s perception. The reason could be because the contractors they are entitled with time and cost if there changes and shifted in the schedule are due to owner’s order for changes.

4. CONCLUSION

Inadequate supervision, regular inspection or verification on construction site was the most important conflict issue related to project quality perceived common by public owners and contractors. Then it was followed by important conflict issues related to project safety, time, scope, personnel and cost. In the important conflict issues that have significant differences in their perceptions of public owners and contractors was related to project quality followed by project time, scope and personnel.

The research shows that exploration of important conflict issues can able to understand the actual issues and the reasons why conflicts occur, so that appropriate solutions can be applied to reduce conflicts. The conflict issues related to project quality and time from both perspectives are the most critical conflict issues between public owners and contractors during construction phase.

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