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ORIGINAL ARTICLE

Micro and macro level of dispute causes in residential building projects: Studies of Saudi Arabia

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Abstract The objective of this research is to identify the common direct and indirect (micro and macro level) dispute causes in residential building projects in Saudi Arabia. The questionnaire method was used in this research. Randomly distributed questionnaire technique was applied to 120 contractors to evaluate the severity of the identified 29 direct dispute causes and 32 indirect dispute causes. The analysis of the identified causes indicates that the top five severe direct dispute causes are: delay in progress payment by owner, unrealistic contract duration, change orders, poor quality of completed works, and labor inefficiencies respectively. While the top five severe indirect dispute causes are: inadequate contractor's experience, lack of communication between construction parties, ineffective planning and scheduling of project by contractor, cash problems during construction, and poor estimation practices.

1. Introduction

The construction industry has perhaps the unenviable reputation of being highly adversarial, and as a result of this, is paradoxically a leader in both dispute occurrences and dispute resolution systems (Keil, 1999). In the construction industry, disputes can be damaging and expensive, but can also seem inevitable. There is no universal definition of dispute. However for the purpose of this research, the dispute is defined as a problem or disagreement between the parties that cannot be resolved by on-site project managers. Disputes in construction may be caused by one or a combination of several reasons. It may start with a simple reason and lead to a substantial set of interrelated complex disputes in contract agreement. Dispute may lead to adversarial relation between the involved parties in construction projects (i.e. general contractors, subcontractors, suppliers, lenders, developers, design professionals and owners).

In Saudi Arabia, the construction industry is one of the main economic keys. However, it suffers some major problems that affect its role in building up the national economy. Assaf et al. (1995) found and reported that the contract disagreement was one of the main delay causes in large building projects in Saudi Arabia. Based on their research, great attention should be paid to disputes between construction parties that lead to negative effects on the project success. Therefore, this research is important. It is considered as the first step in appraising

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disputes and improving methods for dispute resolution and prevention. Thus, this research aims at identifying the common macro and micro level of dispute causes in residential building projects in Saudi Arabia. The questionnaire method was used in this research. Randomly distributed questionnaire technique was applied to 120 main contractors to evaluate the severity of the identified 29 direct (micro level) dispute causes and 32 indirect (macro level) dispute causes. It is hoped that the findings of this research will lead efforts to minimize disputes among construction parties in Saudi Arabia and other developing and developed countries.

2. Literature review

Construction industry is a leader in dispute occurrences. However, very limited researches were conducted to study dispute issues in construction projects. Semple et al. (1994) studied disputes on 24 construction projects in Canada. They concluded six common categories of dispute: premium time, equipment costs, financing costs, loss of revenue, loss of productivity, and site overhead. Colin et al., 1996 conducted a study on 438 dispute events on 21 projects in the UK. They concluded that disputes between construction parties were mainly related to six areas: payment and budget, performance, delay and time, negligence, quality, and administration.

Ayudhya (2011) conducted a study in Honk Kong to identify and appraise the dispute problems in residential building projects. The severity of the 43 identified dispute factors were evaluated by 175 consisting of owners, consultants and main contractors. The results of the survey indicated that construction projects faced moderately severe dispute level between owners and main contractors. The delay in progress payment by owner factor was the highest individual severity index followed by unforeseen problem underground, unrealistic contract durations, inaccurate bill of quantities and inappropriate type of foundation. Waldron (2006) studied disputes in Australian construction and infrastructure projects. He concluded 10 key issues in disputes, they are: variations to scope, contract interpretation, EOT claims, site conditions, late or incomplete information, NA/ or did not know, obtaining approvals, site access, quality of design, and availability of resources. Mezher and Tawil (1998) and Groton (1997) indicated that the most typical dispute causes in construction projects include: unrealistic contract duration and cost, differing site conditions, change orders, delays, impact and ripple effects of delays, evaluation of the quality and quantity of work, owner furnished items, difference in the interpretation of plans and specifications, unfulfilled duties, acceleration, inefficiency and disruption. Rhys (1994) conducted a general survey of construction industry and lawyers to study the disputes in construction industry. He found 10 factors in the development of disputes: poor management, adversarial culture, poor communications, inadequate design, economic environment, unrealistic tendering, influence of lawyers, unrealistic client expectations, inadequate contract drafting, and poor workmanship. Yiu and Cheung (2004) identified 33 dispute sources through the literature and grouped them under two categories: construction related (24 items) and human behavior related (9 items). They conducted a questionnaire survey to rank the identified sources according to their importance. They concluded that the significant sources are: parties expectations and inter parties' problems (human behavior related), and variation and delay in work progress (construction related). Heath et al. (1994) conducted a survey of 28 quantity surveyors and five case studies in the UK to study disputes and claims in construction projects. They concluded seven main types of disputes: contract terms, payments, variations, extensions of time, nomination, renomination, and availability of information.

Many articles examined the relation between construction disputes and main problems in construction projects such as: delay, claims, failure, productivity, rework and cost overrun. They concluded a high correlation between them (Ahmed et al., 2003; Sambasivan and Soon, 2007; Aibinu and Jagboro, 2002; Kaliba et al., 2009; Nega, 2008). Therefore, it is important to review the factors leading to such problems in construction projects to have a detailed and deep view about the direct and indirect dispute causes in construction industry.

In Saudi Arabia, a number of studies have been conducted to investigate main problems of construction projects such as: delay, claims, failure, productivity, rework and cost overrun. Assaf and Al-Hejji (2006) conducted a survey on time performance of different types of construction projects in Saudi Arabia to determine the causes of delay in large construction projects. Surveys concluded that 70% of projects experienced time overrun and found that 45 out of 76 projects considered were delayed. They found that the average time overrun was between 10% and 30%. 73 causes of delay were identified during the research. They concluded that only one cause of delay is common between all parties, which is "change orders by owner during construction". They found that many causes are common between two parties, such as delay in progress payments, ineffective planning and scheduling by contractor, poor site management and supervision by contractor, shortage of labors and difficulties in financing by contractor.

Al-Khalil and Al-Ghafly, 1999 conducted a research to investigate three components of delay in the construction of water and sewage works in Saudi Arabia. The components are (1) the frequency of delayed projects, (2) the extent of delay, and (3) the responsibility for delay. The results of the survey showed that a high proportion of projects were subject to delay, especially in medium- and large size projects. The frequency of delayed projects seems to be associated with the contractor classification grade, but not with the region where the project is constructed. It was also found that the extent of delay was severe. They found that the project owners and consultants assigned the major responsibility for delay to the contractors while contractors believed that the owner is mostly responsible.

Assaf et al. (1995) studied the causes of delay in large building construction projects in Saudi Arabia. They outlined 56 main causes of delay. The most important causes of delay included approval of shop drawings, delays in payments to contractors and the resulting cash-flow problems during construction, design changes, conflicts in work schedules of subcontractors, slow decision making and executive bureaucracy in the owners' organizations, design errors, labor shortage and inadequate labor skills. Al-Ghafly (1995) discussed the delay in public water and sewage projects in Saudi Arabia. Sixty causes were identified and classified. He concluded the following: the delay occurred frequently in medium and large size projects, and are considered severe in small projects. There are many important causes of delay related to owner involvement, contractor performance, and the early planning and design of the project. Important causes are financial problems, changes in the design and scope, delay in making decisions and