Identification of Critical Factors Affecting the Communication of Safety-Related Information between Main Contractors and Sub-Contractors in Hong Kong

Research team: Francis K.W. Wong, Albert P.C. Chan, Paul Fox, Kenny T.C. Tse and Esther F.N. Ly

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Background
Over the past three decades, the Hong Kong construction industry has experienced a very high level of industrial accidents, more than any other industries. In the past, the Hong Kong Government adopted a laissez-faire approach in managing construction safety - the safety performance heavily relied on the regulation by the market forces (Chan 2000). In fact, it meant that regulations were in place to prescribe how workers should be protected, but enforcement of regulations was often lax. This approach had proven to be ineffective (Chan 2000). The cost of accidents was relatively low since claims by victims were small until the beginning of the 1990s. Consequently, insurance premiums were also low. Gradually since then, claims from victims have increased and insurance premiums have risen so that market forces have slowly changed the senior management’s view on the importance of safety to their profits. At the same time, the increasing professionalism in the management of projects has placed more and more emphasis on safety, health and welfare issues. The Government has also raised the awareness through a series of measures. Although the overall accident rate dropped down, the level of fatalities was still unacceptable. Lingard and Rowlinson (1994) reported that the annual accident rate per 1,000 workers was twice its US counterpart, more than 20 times that of Japan and nearly 30 times that of Singapore. In recent years, the Hong Kong Government has been involved in combating the poor safety performance, and has introduced a series of safety programmes, which consist of both incentive and mandatory schemes in order to nourish a better safety culture in the construction industry.

According to a previous research on safety practice in Hong Kong (Wong 2002), there are 5 major factors affecting safety on sites, namely Communication of Safety Policy, Safety Committee, Safety Training, Practice & Procedure, and Participation & Consultation. Of these, Communication of Safety Policy, appears to hold the key for preventing safety hazards, and is especially important in the relationship between main contractors and sub-contractors. Wong (2002) showed that Communication of Safety Policy was important both at the level of the Group C main contractors as well as at the level of projects on site. Given the additional factor of Participation & Consultation which he also identified operating at the level of projects, it shows strong evidence of the need for good communication generally. Since the main contractors in Hong Kong sublet typically about 90% of the work, then the interface between main contractors and sub-contractors is particularly of interest. Clearly, the multi-level nature of the Hong Kong subcontracting system as a whole will affect communication up and down the system hierarchy.
Significance of the Project
This study deals with improvement of safety performance and looks into the reasons why the communication and implementation of safety policy are difficult. Given that the construction industry is largely project-based, and the sub-contracting is the norm, this shows that the communication between main contractors and sub-contractors is of significant importance. How the safety information flows, how effective are the messages being disseminated and received, how fluent the feedback systems are being made, and what are the attitudes of different parties in the communication process, etc. are the key questions that were investigated in this study.

Aims and Objectives
The aim of this study is to identify the underlying factors that are critical to the success of communication of safety-related information. Once those factors are identified, recommendations are made to enhance the success of site safety implementation.

Outcome and Deliverables
From the 56 major variables affecting the effective communication of safety-related information, 11 underlying factors, including 6 adverse factors and 5 positive factors, have been identified as crucial through the questionnaire survey. The objective of the structured interviews is to verify the results of the survey and to collect supplementary comments from experienced practitioners. The interview results unambiguously and consistently support that all the positive factors are contributors of good safety communication between main contractors and sub-contractors. Certain positive factors have an Indicative Percentage of Agreement (IPA) of 100%. The lowest one is 79% and the average is 92%. In contrast, most of the adverse factors exhibit a relatively low degree of agreement. Only one of the factors has an IPA of 92%. The lowest one is just 29% and the average is 66%. The comments from the interviewees signify that there are situations in which the validity of the identified adverse factors could be undermined. Hence, decisions related to these adverse factors should be made with extra caution.

It is interesting to note a major difference of findings between the main and sub-contractors' points of view. Main contractors find that low degree of loyalty and poor morale of workers are the most important factors in affecting safety-related communication between the two parties. Whilst, sub-contractors find that developer's and main contractor's over emphasis on time and cost imposes too much pressure on them. As a result, they have to pay less attention to communication and safety implementation involuntarily. On the other hand, there is a high consistency upon the influence of the quality of communication by the factor of accuracy / precision of information and training.

References