Enhancing Worksite Safety: Impact of Personnel Characteristics and Incentives on Safety Performance

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Abstract

The construction industry is responsible for more that 35% of the total number of industrial accidents in Singapore, but adds about 5% to the GDP. There is therefore a need to reduce the number of construction site accidents. This paper investigates the personnel and incentive factors that significantly affect site safety as a previous study has shown that the impact of personnel characteristics and incentives on safety performance is significant; hence, in order to increase worksite safety, the importance of intrinsic behaviour and external incentives cannot be ignored (Teo and Ling, 2006). A questionnaire is designed to collect project-specific safety related data from contractors who undertook construction projects in Singapore. Sixty contractors rated the importance level of specific attributes relating to site safety. The results show that there are many personnel factors that affect site safety. These include: workers and supervisors adopting safe work behaviour and good attitude towards safety; providing them with safety and health training; management adopting safety culture and displaying clear responsibilities towards safety and health promotion; managers and supervisors adopting practices that allow them to have better influence over workers; and a safety committee given clear roles and responsibilities which are understood by all employees. The study finds that punishments and penalties have been used to control site accidents. It is recommended that contractors pay greater attention to personnel factors as these can improve construction safety more significantly than punishments.

Keywords

Incentives, personnel, site accidents, construction management.

Introduction

The construction industry is considered to be one of the most dangerous and hazardous industries to work in (Haupt, 2003; Kines, 2002). As such, safety and health standards have to be raised in order to entice workers and professionals to continue working in the construction industry. Table 1 shows a comparison between Singapore’s construction industry’s contribution to the gross domestic product and its share of accidents.

Figure 1 shows industrial accidents by frequency rate. In 2006, the construction industry was still having the highest number of man-days lost per 100 employees (Workplace Safety and Health Advisory Committee, 2007). Taking Table 1 and Figure 1 together, it can be seen that the problem is the construction industry’s disproportionately high contribution to accidents in Singapore. The construction sector contributes less than 9% to the Gross Domestic Product, but accounts for more than 37% of all industrial accidents in Singapore.