HEALTH AND SAFETY MANAGEMENT PRACTICES OF SMALL SUBCONTRACTORS

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Effective management practices can significantly improve health and safety in the construction industry. The UK Government's Health and Safety Executive has demonstrated that improved management can prevent around 70 per cent of accidents on site. Unfortunately, small subcontractors are constrained by lack of access to technological, financial and management expertise when devising their health and safety management plans. Arguably, they require effective health and safety management measures and evaluation tools that allow weaknesses in their operations to be established and addressed. Such tools would provide a basis for continuous improvement in the health and safety management practices of these organisations. This paper is a stage report on research, which seeks to develop a model of health and safety management by small subcontractors and a tool that will facilitate effective health and safety management in small subcontractor organisations. The paper reviews health and safety management practices within small firms and describes the research methodology.

Keywords**:** health and safety management practices, small and medium-sized businesses, small subcontractors, research methodology, research paradigm.

INTRODUCTION

Research study indicates that 80 per cent of the construction work undertaken by the UK main contractors is subcontracted (Saad (1998) cited in Thorpe (2003)). Most subcontractors are small businesses (employing less than 50 employees) specialised in various trades in the construction industry and about 93 per cent of such businesses employ seven or less employees (Dainty *et al.* 2001). This paper is part of a PhD research and it presents the methodology for investigating construction site health and safety management, focusing on small subcontractors.

The paper begins with a background of the research study. Secondly, the findings on the literature review are presented and research questions developed as a guiding focus for the study. The paper then presents the research methodology developed for the study and outlines the future research to be conducted.

BACKGROUND TO THE RESEARCH

Health and safety issues are increasingly a serious concern to governments, international agencies, employers and trade unions. The basis of this concern is on moral, ethical, social and economic grounds. Occupational accidents and ill health cause great suffering both to victims and their families. It is therefore morally and ethically unacceptable to allow harm to employees, contract workers and the public resulting from risks at workplaces. Accidents also cause physical damage and

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disruption of work programmes. The tangible and less tangible cost of accidents also has significant impact on the economy of countries. Despite concerted efforts to stem workplace injuries and illnesses, statistics on health and safety present an unenviable picture. Worldwide, there are 1.1 million work-related fatalities and more than a billion occupational injuries each year (Takala 1999, 2002). Indeed, the highlights of the Health and Safety Executive report (Health and Safety Executive 2004) on the Revitalising Health and Safety reveal the following:

- the rate of fatal injury to workers is at a similar level in 2003/04 (0.81) as it was in the base year 1999/2000 (0.79). The rate rose in 2000/01, fell in the following two years, and then rose in 2003/04;
- the rate of reported major injury to employees shows an increase over the four-year period 1999/2000 to 2003/04. The rate fell in 2000/01, but in the three years since has risen, mainly in service industries and also in the numbers of injuries such as lacerations, sprains, strains, contusions and superficial injuries;
- the rate of over-3-day injury to employees shows a decrease over the four-year period; and
- the statistics show no evidence in the overall change in work-related ill health incidence since 1999/2000 (The base year).

The construction industry contributes significant numbers of accidents and cases of ill health to the statistics.

Research into accident causation indicates a causal link between accidents and failures in safety management (Goh and Chua 2002, Haslam *et al.* 2003). However, research on health and safety has, in the main, concentrated on large firms (Smallman 2001). Small and medium-sized businesses (SMEs) have characteristics distinct from large firms and it is therefore arguable whether any knowledge on the health and safety practices of large firms can be transferred to SMEs. Little is known of the attitudes of owner-managers to health and safety issues and the capability of management of SMEs to manage health and safety.

There is an inverse relationship between business size (number of employees) and occupational accidents (Reilly *et al.* 1995, McVittie *et al.* 1997, Fabiano *et al.* 2004). It can therefore be argued that small workplaces are more likely to have accidents than larger ones. Champoux and Brun (2002) demonstrated that health and safety management problems in small businesses are related to lack of adequate resources to address health and safety issues, and lack of knowledge of the firm's health and safety risks. It can therefore be inferred that lack of resources contributes to the problem of accidents in SMEs. SMEs constitute over 99 per cent of construction businesses in the UK contributing to 76 per cent of employment. The majority of them obtain work as subcontractors and therefore form an important group in the supply chain in the UK construction sector. Principal contractors have influence on health and safety issues relating to small subcontractors' work packages. Safety management at the principal contractor/subcontractor interface is important since the bulk of the work, if not all, is let out as subcontracts. Effective health and safety management is only possible when the safety management systems of principal contractor and subcontractor complement one another. Considering the high-risk nature of the construction industry and the forgoing issues, a study aimed at health and safety management by small subcontractors is imperative. Effective health and safety management of such

organisations will lead to enhanced health and safety performance of construction sites and the industry sector at large.

LITERATURE REVIEW

SMEs have distinct characteristics, which affect many of their managerial functions. Managerial and organisational processes in SMEs are less formal, with the level of formality depending on the age and size of the business (Ghobadian and Gallear 1997, Kotey and Slade 2005). They are generally characterised by flat and flexible organisational structures with very few layers of management. Activities and operations are governed less by rules and procedures and the line of communication is much shorter. The owner-manager takes responsibility for decision-making and maintains a close relationship with employees. Such a role, according to Hanks (1993), results in no need for formal controls, detailed documentation and procedures. The owner manager is a dominant person in the organisation and employees' behaviour is highly influenced by her or him. According to Fielden et al (2000), the simple communication structure of small businesses promotes innovation, team spirit, and an easier focus on clear goals.

Research study indicates that SMEs are agile (Nooteboom 1994, Sexton and Barrett 2003a). The informal style of management and flat organisational structure facilitate fast decision-making with very few impediments. Thus, it could be reasonably expected that decisions relating to health and safety should be addressed rapidly and efficiently given committed management of small subcontractors and supportive principal contractor and client. Not all managerial functions and or processes are however, a function of size of business. O'Regan and Ghobadian (2004) found that size has no significant impact on strategic planning, culture and leadership process in small businesses.

HEALTH AND SAFETY MANAGEMENT IN SMEs

Small businesses view health and safety management as cost (Wright 1998) and few of them commit adequate resources into managing health and safety risk. Research findings indicate that there are motivators of health and safety management in small businesses. Wright (1998) identified adverse publicity as one such motivator. Baldock (2005) identified regulatory enforcement, external assistance on health and safety, enterprise size and growth performance, management training and experience and membership of trade associations to be associated with an inclination to make health and safety improvements. The findings of Champoux and Brun op cit suggest support for the influence of membership of business and or trade associations on health and safety management in small businesses.

The adoption of fully-fledged occupational health and safety management systems (OHSMS) by SMEs is unlikely considering the meagre resources at their disposal and their informal structure. Bottomley (1999) argues size and industry sector are critical in determining the shape and style of implementation of OHSMS. On the one hand research has reported on successful implementation of OHSMS in SMEs (Helledi 1999, Smith *et al.* 1999, Douglas and Glen 2000) where collaboration and external support from consultants and or business service centres have facilitated the adoption of OHSMS in the success cases. On the other hand, contrary research has favoured the adoption of simplified health and safety management systems or abridged OHSMS (ACCI 1999, Costello and Merrett 2000, Walker and Tait 2003). Past research therefore gives an indication that an effective health and safety management system that meets the specific needs of small businesses has yet to be found. If so, it is

relevant to ask: how is health and safety managed in SMEs, and moreover, how can health and safety be effectively managed in SMEs?

Small businesses' approaches to health and safety management are likely to vary between firms, industry sectors and across countries. The level of emphasis on health and safety issues differs for different size categories of small businesses. Champoux and Brun found firms employing less than five employees to have no occupational health and safety structure and employees were considered responsible for their accidents whereas those employing more people generally had a structured and participatory approach to health and safety issues. Small businesses in high-risk industries have intrinsic motivation to take measures to mitigate risk of accidents and ill health. Health and safety legislation influences approach to health and safety management. British health and safety legislation emphasises on the setting of health and safety goals rather than prescriptive standards. The Regulation therefore drives systematic and proactive management of health and safety risk.

HEALTH AND SAFETY MANAGEMENT BY SMALL SUBCONTRACTORS

The construction industry has some unique characteristics, which render health and safety particularly problematic for SMEs operating within it. These can be summarised as follows:

- Construction products are fixed in location and the project participants differ from project to project. This makes it difficult for experience and knowledge gained on one project site to be implemented on another.
- The industry is fragmented, making a collaborative approach to health and safety issues difficult. Although health and safety regulatory frameworks define the responsibilities of the various parties, a cohesive rather than an individualistic approach is needed for effective health and safety management of construction sites. Small subcontractors play an important role in the supply chain since a bulk of the works is let out as subcontract work packages.
- Principal contractors directly influence subcontractors' approach to health and safety issues relating to their work packages. Other key players within the supply chain also influence health and safety including material suppliers and contract workers.
- The nature of competition within the construction industry can lead to lowest cost solutions, which disregard health and safety considerations.

A range of factors therefore drive and shape the health and safety activities of small subcontractors, which are summarised within Figure 1. Health and safety management activities in this context include: health and safety policy and objectives statement, training, inspections, risk assessments, health and safety responsibilities, and employee involvement in health and safety issues.

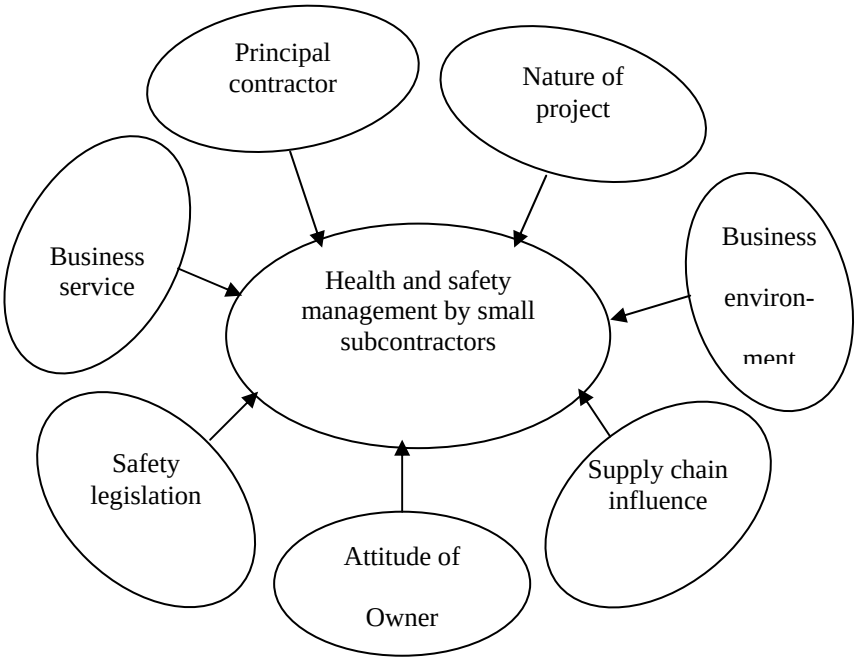

Figure 1 factors influencing health and safety management by small subcontractors

RESEARCH PROBLEM

The overarching aim of this research is to develop an understanding of health and safety operational activities of small subcontractors. Knowledge of how small subcontractors manage health and safety and what robust methods can be adopted to minimise health and safety risks will lead to an effective strategy. The relevant research questions are:

- How do small subcontractors manage health and safety?
- What health and safety issues exist in relation to small subcontractors?
- How do health and safety issues affect health and safety management by small subcontractors?
- How can small subcontractors effectively manage health and safety?

RESEARCH METHODOLOGY

A methodology is required for this study, which will provide answers to the research questions posed. In short, the approach adopted was to develop a method to suit the problem and not a problem to a method (Linstone (1978) cited in Kagioglou (2000)). The case study methodology offers a suitable choice from the types of research questions that are to be investigated. The case study approach is believed to be useful for allowing a particular issue to be studied in depth and in the context of its relationship with real world (Feagin *et al.* 1991) In addition, the variables identified from the literature review form a theoretical framework upon which the methodology is based.

PHILOSOPHICAL PARADIGM UNDERLYING THE METHODOLOGY

Without a research paradigm a methodology is a mere application of specific data collection methods. The nature of the social world and whether the boundary is placed around some form of ‘milieu of social actors’ or on individual ‘entrepreneur/owner-

managers' provide a helpful map of paradigms underlying case-studies in the small business and entrepreneurial area (Perren and Ram 2004). The social world can be viewed as an objective reality or as a way in which the individual creates, modifies and interprets the world (Burrell and Morgan (1979) cited in Grant and Perren (2002). Health and safety is the concern of various players in the construction industry. The approach to health and safety by small subcontractors cannot be understood without developing an understanding of small subcontractor organisations and their relationships with other project participants. Thus, the methodological approach has been designed in such a way as to reveal the perspective of small subcontractor owner managers, their employees and the other project stakeholders with whom they interface. The unit of analysis is defined as the individual firm, but with acknowledgement to the project as the arena within which such interactions occur.

RESEARCH APPROACH

A multiple-case study approach is adopted with the unit of analysis being the small subcontractor organisation. The procedure for the study is divided into five phases outlined in Figure 2.

- The first phase involves pilot studies of three small subcontractors working on a medium-sized project. The aim of the pilot study is to help refine data collection methods and to develop relevant research questions and to provide clarification for research design Yin (1994).
- The second phase involves a case study of one small subcontractor working on a project site of similar magnitude to that of the pilot site and a replication of this study on two others working on the same project site.
- The third phase will involve analysis of the case study evidence. Analytical tools that the research identified will be useful include; cross-tabulations, regression and correlation analysis, factor analysis and explanation building.
- The fourth phase will involve development and validation of a model and a health and safety management tool for small subcontractors.
- The fifth will involve drafting of significant findings and conclusions to be drawn from the study.

Data collection techniques

Several data collection techniques are employed in case studies in order to facilitate triangulation of data. Six primary sources of data have been identified by Yin op cit as follows:

- documents;
- archival records;
- interviews;
- direct observation;
- participant observation; and
- physical artefacts.

Archival records and physical artefacts are irrelevant sources of data so far as concerns this study. Participant observations are used in situations, which require the researcher to participate in the events being studied and where interviews are likely to

bias the data collected. The data collection techniques useful for the study are; interviews, observation and examination of documentation. The identified subjects to be interviewed are; principal contractors' site managers, construction sites' safety representatives, and small subcontractors' site supervisors.

- A semi-structured interview style employing open-ended and probing questions will be adopted in the pilot case study phase. This will enable, as much as possible, insight to be obtained from respondents' opinions on health on safety issues. The Development Office of the researcher's institution has arranged access to construction sites and participants. The pilot study will enable refinements on data collection procedures and instruments to be carried out. A semi-structured interview style employing both open-ended and closed ended questions will be used during the actual case study phase.
- To collaborate evidence provided by interviews, site observations would be carried out which focus on safety behaviour of site operatives. This will involve site visits to construction sites and will be carried out as a casual activity.
- Documentation related to health and safety issues will also be used as a major source of evidence. These are requested for politely from the interviewees at the end of interview sessions.

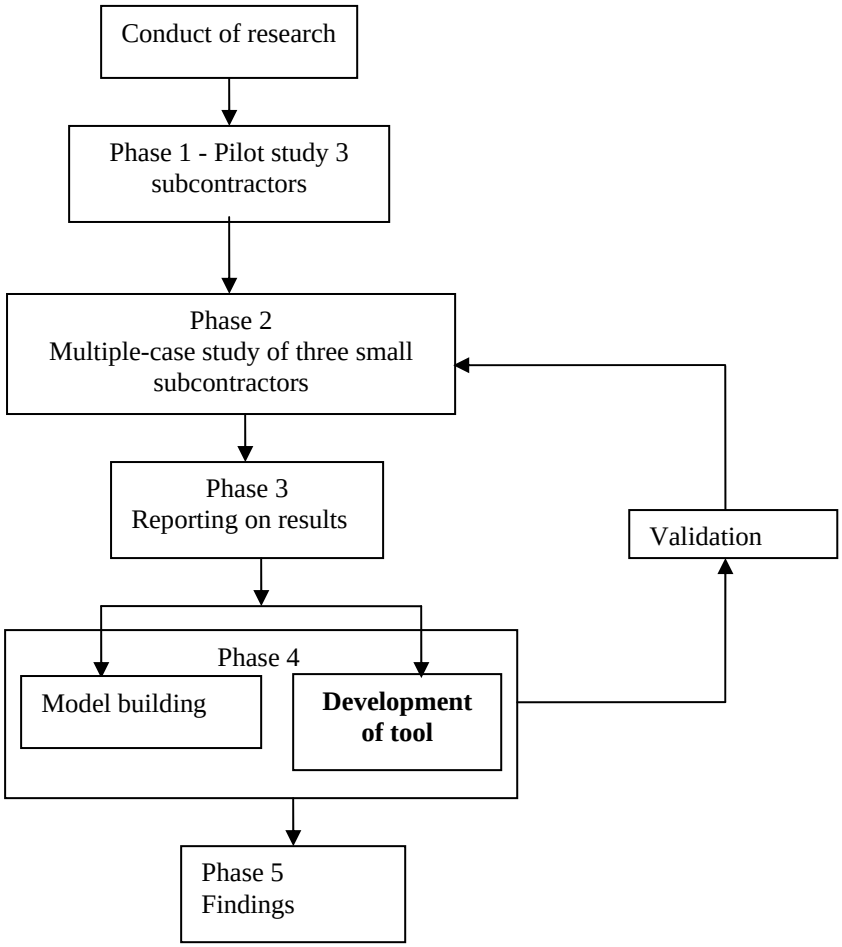

Figure 2 Procedure for the study

CONCLUSIONS

Research on health and safety with a particular focus on small businesses is rare, even though they constitute a large proportion of businesses and form an important economic sector. Accidents and occupational illnesses are more prevalent in small businesses. Small subcontractors are particularly faced with a more difficult task considering the high-risk nature of the construction industry and the peculiar characteristics of the industry which make health and safety management more difficult.

The literature search reveals several factors which impact on the health and safety management of SMEs. The paper argues for the extension of these factors to small subcontractors and other variables that come into play because of the characteristics of the construction industry is highlighted. The nature and interaction of these variables is not understood. Developing an understanding of these variables is the key to understanding health and safety management of small subcontractors and it is therefore the core aim of this research.

The research problem underscores the choice of an appropriate methodology. A multiple case study methodology with a paradigmatic view of the small firm as an organisation is presented in the forgoing sections. This philosophical view is one of several that can be considered and holistic and comprehensive understanding of small subcontractors' health and safety issues cannot be acclaimed. Other methodologies employing paradigms other than the one discussed are suggested for further research in the area of small subcontractor health and safety management.

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