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**IMPACT OF HEALTH AND SAFETY MANAGEMENT ON SAFETY  
PERFORMANCE OF SMALL AND MEDIUM-SIZED CONSTRUCTION  
BUSINESSES IN GHANA**

**by**

**Nongiba Alkanam Kheni BSc, MSc.**

**A Doctoral Thesis submitted in partial fulfilment of the requirements for  
the award of Doctor of Philosophy of Loughborough University**

**January, 2008**

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## ABSTRACT

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Health and safety at construction sites deals with both physical and psychological well being of workers on construction sites and other persons whose health is likely to be adversely affected by construction activities. It is of primary concern to employers, employees, governments and project participants. Although accident figures of the construction industry remain unacceptably high, some achievements in health and safety have been made. Nevertheless, the role of enabling socioeconomic, cultural, political, and institutional environments in health and safety management has either been overlooked or under-emphasized. The importance of such enabling environments in this thesis is couched from the context of developing countries in particular, Ghana.

In broader terms, the links between the socioeconomic, cultural, political, and institutional environments and health and safety at construction sites are still poorly understood. This thesis aims to understand the influence of the contextual environment on health and safety management within construction SMEs in Ghana and to develop a framework of recommendations for improving health and safety performance of the sector based on the analyses of the contextual environment.

The thesis has adopted a multimethods strategy design, employing data collection techniques suited to the research setting. The discussion of results highlight the significance of the Ghanaian socio-cultural value systems particularly, the extended family system and traditional religious value systems in health and safety management within Ghanaian construction SMEs. The institutional structure for implementing health and safety standards on construction sites and the prevailing economic climate which undermines an enabling environment hinder construction SMEs from managing the risks of hazards on construction sites effectively. The research also gives insights into the difficulties posed by the internal environment of SMEs to the effective management of health and safety.

Key issues identified by this study include: lack of skilled human resources; inadequate government support so construction SMEs; inefficiencies in the institutional structure

responsible for implementing health and safety standards; the practice of corporate social responsibility; appropriate procurement practices; and, commitment to extended family obligations. These key issues need to be further explored. The study has made recommendations which, if adopted, will lead to significant improvements in the health and safety performance of construction SMEs in Ghana.

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**CERTIFICATE OF ORIGINALITY**

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This is to certify that I am responsible for the work submitted in this thesis, that the original work is my own except as specified in acknowledgements or in footnotes, and that neither the thesis nor the original work contained therein has been submitted to this or any other institution for a degree.

..... (Signed)

..... (Date)

---

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## LIST OF ABBREVIATION

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ABCECG	Association of Building and Civil Engineering Contractors of Ghana
AESL	Architectural and Engineering Services Limited
AIDS	Acquired Immunodeficiency Syndrome
ASROC	Association of Road Contractors Ghana
BACs	Business Advisory Centres
BRI	Building and Road Research Institute
CBMWU	Construction and Building Materials Workers Union
CDD	Center for Democratic Development
CSIR	Council for Scientific and Industrial Research
CSM	Celebo Spinal Meningitis
DANIDA	Danish International Development Agency
DFID	Department for International Development
DFR	Department of Feeder Roads
DUR	Department of Urban Roads
EPA	Environmental Protection Agency
ERP	Economic Recovery Programme
FID	Factory Inspectorate Department
FIDIC	International Federation of Consulting Engineers
FUSMED	Fund for Small and Medium Enterprises Development
GDP	Gross Domestic Product
GEA	Ghana Employers Association
GHA	Ghana Highways Authority
GhIE	Ghana Institution of Engineers
GhIS	Ghana Institution of Surveyors



GIPC	Ghana Investment Promotion Centre
GOG	Government of Ghana
GSOH	Ghana Society of Occupational Health
GTZ	German Technical Cooperation
HIV	Human Immunodeficiency Virus
IDA	International Development Association
ILO	International Labour Organization
IMF	International Monetary Fund
INSTI	Institute for Scientific and Technological Information
InWent	Capacity Building International, Germany
JSS	Junior Secondary School
MDGs	Millennium Development Goals
MES	Ministry of Environment and Science
MLFM	Ministry of Lands, Forestry and Mines
MMDL	Ministry of Manpower, Development and Labour
MOE	Ministry of Education
MOH	Ministry of Health
MPSD	Ministry for Private Sector Development
MRT	Ministry of Road Transport
MWH	Ministry of Works and Housing
NACOSH	National Commission on Occupational Safety and Health
NBSSI	National Board for Small Scale Industries
NGOs	Non-Governmental Organizations
NHS	National Health Insurance Scheme
P	Proposition
PFSS	Pay For Safety Scheme
PPE	Personal Protective Equipment

SAP	Structural Adjustment Programme
SOEs	State Owned Enterprises
SMEs	Small and Medium-sized businesses
SSA	Sub-Saharan African Countries
SSNIT	Social Security and National Insurance Trust
SSS	Senior Secondary School
TUC	Trades Union Congress
VSP	Vocational Skills Training Project

### 1.1 CONSTRUCTION IN DEVELOPING COUNTRIES, SMES AND HEALTH AND SAFETY

Construction processes in developing countries share similar characteristics in terms of the adoption of technology, construction methods, cultural environments and regulations (Hillebrandt 1999, Ofori 1999, Thomas 2002). These aspects of the industry in developing countries make the management of construction projects including health and safety a difficult one (Jaselskis and Ashley 1999). Procedural requirements are lengthy, construction materials are scarce and delays are commonplace (Faniran 1999, Wells 1986). The productivity of construction SMEs, particularly micro construction businesses, has been shown to be adversely affected by laid down procedures, delayed payments and resource constraints (Sohail et al. 1999).

In spite of the numerous constraints facing the industry in developing countries, it makes significant contributions to economic growth. A number of studies have highlighted the role the industry plays in the economy of developing countries (Anaman and Osei-Amponsah 2007, Edmonds and Miles 1984, Ganesan 1994, Hillebrandt 1999, Lopes 1998, World Bank 1984a). These studies have established significant relationships in one way or another, between the rate of growth of the construction industry and the rate of macroeconomic growth. Typically, the industry contributes 2 to 11 percent of GDP in most developing countries (Jayawardane and Gunawardena 1998, Muya et al. 2006, Trigunarsyah and Kajewski 1998, Wells 2001). The products of the industry are used by other industrial sectors for the production of other goods and services. For instance, the development of feeder roads, village market infrastructures, electricity and water supply will spur production of rural goods and services while creating employment for the rural folk. In developing countries where unemployment is particularly high, the construction industry is an important source of jobs for unskilled persons who are unemployed.

The nature of the products of the construction industry makes it a strategic option for implementing government's development policies. Its activities are tightly regulated by governments, making it a means of achieving the developmental goals of many countries. For instance in South Africa, Merrifield (1999) reported on the government's strategy to improve quality of life and municipal rural services and to build economic capacity through public-private partnerships and alternative service delivery methods. Following independence, the Nkrumah government in Ghana embarked upon infrastructural development to attract foreign investors and facilitate industrial growth in the country (Seidman 1978). This period saw several building materials manufacturing industries flourish which hitherto, had not been witnessed in the country's history. Labour intensive methods, typically employed in the construction industry in developing countries, also makes it most appealing for implementation of government policies relating to job creation.

Alongside the attractiveness of the construction industry in nation building, its activities sadly pose serious health risks to workers, users of construction facilities and the public. It has been acknowledged that 25–40 percent of fatalities in the world's occupational settings are contributed by construction (ILO 2005). Other research conducted in developing countries corroborates evidence of this relatively high proportion of accidents on construction sites (ILO 2001, Murie 2007). Hazards frequently encountered in the construction industry include: dangerous chemicals; dust; exposure to vibration; high noise levels; manual lifting of heavy weights; unguarded openings; ionizing radiations; fire; exposure to live cables; and, moving mobile construction plant on site. The risks that these hazards pose are often unacceptably high on construction sites. Traditionally, measures are taken to eliminate these hazards where possible, or reduce their risks to an acceptable level on construction sites. However, measures taken to control risks of hazards on construction sites in developing countries are unsatisfactory (Gibb and Bust 2006, Haupt and Smallwood 1999, Koehn et al. 1995, Suazo and Jaselskis 1993).

The construction industry comprises many different participants including clients, consultants and construction businesses that perform different roles from conception to commissioning of a typical construction project. Construction businesses are responsible for the execution of

the project in accordance with contract documents. They constitute the largest and highly regulated group of actors in the construction industry of many countries. In developing countries, there are fewer large construction businesses compared with small and medium-sized construction businesses (SMEs) (Addo-Abedi 1999, Kenny 2007). SMEs play an important role in the economies of developing countries. Consequently, they have received attention of governments in developing countries (Forstater et al. 2006, Raynard and Forstater 2002). Construction is labour intensive, particularly in developing countries, making it more suitable than capital intensive sectors for the entry and growth of SMEs. The majority of contractors in developing countries are SMEs and operate within domestic markets. In Ghana, for instance, Addo-Abedi (1999) has observed that almost all domestic contractors are SMEs. Considering the huge number of SMEs in any country therefore, the health and safety risks posed by their activities cannot be ignored. SMEs in many developing countries operate in the informal sector which recently has undergone a phenomenal growth in many developing countries, particularly Sub-Saharan African countries (SSA). This is primarily a result of implementation of structural adjustment programmes (Mitullah and Wachira 2003, Wells 1999, 2001).

This research is about contextual influences on health and safety management within Ghanaian SMEs and developing a framework of recommendations for improving health and safety performance of the construction SME sector. The research contributes to construction health and safety management in three ways:

- The study has provided insights into how the extended family and religious value systems of Ghana affect attitudes of owner/managers and their employees to health and safety in the country. Also, it has provided insightful understanding of how the prevailing socio-economic environment in Ghana impacts on health and safety management within SMEs. These findings of the study have theoretical implications for developing and implementing health and safety interventions and policies. The findings can also form the basis for developing generic guidelines for transferring health and safety best practices of international construction businesses operating in other socio-cultural settings to Ghana.

- The study has identified key obstacles to effective health and safety management within Ghanaian construction SMEs. Literature on health and safety management as noted elsewhere in this study, has largely assumed the existence of a stable and enabling environment. However, for a developing country such as Ghana, the influence of the economic conditions, the institutional arrangements for national occupational health and safety management and the country's political climate on health and safety management within construction SMEs as the findings of this research suggest, cannot be ignored. Ineffective prevention services, low socio-economic status of workers, size related constraints are factors that compound the problems of health and safety management within construction SMEs. These barriers need to be carefully considered in developing health and safety support for construction SMEs in Ghana.
- Based on the analysis of the contextual environments of Ghanaian construction SMEs, this study has made recommendations for improving health and safety management within construction SMEs in Ghana. The recommendations have implications for policy making which affect the construction industry. The recommendations may be regarded as the key to creating an enabling environment for health and safety management within construction SMEs in Ghana. In this way, they form the basis upon which specific company health and safety interventions may be developed and implemented on construction sites.

## **1.2 RATIONALE OF THE RESEARCH**

The body of literature on health and safety management deals with workplace practices to control the risks of workplace hazards (Hinze and Gambatese 2003, Jaselskis et al. 1996, Lingard 2001, Liska et al. 1993, Mohammed 2002, Tam and Fung 1998). However, the importance of institutional arrangements, political climate, national economy and national socio-cultural environments and how these affect health and safety management within businesses have not been developed in the health and safety literature. Where these have been considered, there is often lack of depth in the discussion on and coverage of these issues. Enabling business environments exist in developed countries or at least, there is concerted

effort by governments to create an enabling business environment. Interestingly, there is a paucity of literature on the relationship between the environments of businesses and health and safety management at the organisational level in developed countries (Nuwayhid 2004). A large proportion of the population in developing countries live below the poverty line, many of the governments are struggling to build a strong and lasting democracy and the institutional structures and administrative processes which have been inherited from colonial rule are presently ineffective. The particular context of developing countries therefore requires a holistic view of health and safety management that takes account of the contextual environments of SMEs. Such a view should help provide insights into health and safety management at construction sites in developing countries and contribute to understanding the health and safety behaviour of SMEs. This research fills this gap by exploring the environments of SMEs in relation to their health and safety management practices.

Construction in developing countries involves more workers per activity on site. Typically, 2-10 times as many workers per activity compared with developed countries (Koehn and Reddy 1999). More workers are therefore exposed to hazards. Additionally, factors such as an under developed local building materials industry, lack of adequate construction skills supply, the transient nature of working environment in construction and problems in enforcing compliance with health and safety laws exacerbate the situation. These shortcomings underscore the need to examine the aforementioned issues. Also, workers in developing countries have the right to safe and healthy working environments (ILO 2007). The contributions of research on health and safety at workplaces could hold some promise to improve working conditions. Attaining the Millennium Development Goals (MDGs) which are focused on reducing poverty, improving the quality of people's lives, ensuring environmental sustainability and building partnerships will require more concerted efforts by governments and businesses in developing countries to improve workplace health and safety through a combination of prevention strategies and commitment to research. Ghana's medium-term development strategy essentially embodies the MDGs, with little emphasis put on enhancing the productivity of the construction industry (Anaman and Osei-Amponsah 2007, Government of Ghana 2006). The contribution improvements in health and safety of

the construction industry could make to productivity of the sector can be significant and hence facilitate the attainment of the MDGs.

### **1.3 RESEARCH QUESTIONS AND OBJECTIVES**

The research questions for examining health and safety management within Ghanaian construction SMEs are derived from the literature review sections 2.7 and 4.6. These are stated as follows:

1. What are the key contextual influences on health and safety management practices within SMEs in Ghana (Section 2.7)?
2. What implications do the contextual environment of Ghanaian construction SMEs have for improving occupational health and safety management within construction SMEs in Ghana (Section 2.7)?
3. What main health and safety management practices are adopted by Ghanaian construction SMEs to control the risks of hazards on construction sites in Ghana (Section 4.6)?
4. What are the key organisational influences, if any, on the health and safety management practices of Ghanaian construction SMEs (Section 4.6)?

The following four propositions, derived from the fourth question and literature discussions relating to it, summarise the relationships between organisational characteristics of SMEs and health and safety practices:

Proposition (P) 1: construction SMEs with few employees are less likely to adopt health and safety practices. Those with a large number of employees are likely to be health and safety conscious and adopt measures to control health and safety risks.

Proposition (P) 2: construction SMEs with small turnovers are less likely than their counterparts with large turnovers to adopt health and safety measures to control health and safety risks on sites.

Proposition (P) 3: civil engineering SMEs are more likely to adopt health and safety practices compared to building contractors (this proposition was derived from literature suggesting that contractors specializing in civil engineering



works are better implementers of health and safety practices).

Proposition (P) 4: long established SMEs are more likely to adopt health and safety measures than newer companies.

In seeking the answers to the research questions and investigating the propositions stated, the study aims to understand the influence of the contextual environment on health and safety management within construction SMEs in Ghana and to develop a framework of recommendations for improving health and safety performance of the sector. The specific objectives of the research are:

- to examine the contextual influences; cultural, institutional, legal and economic, on health and safety management within construction SMEs in Ghana;
- to evaluate the health and safety management practices of Ghanaian construction SMEs;
- to identify the critical factors limiting the capacity of SMEs in Ghana to manage their operations in a safe and healthy manner; and
- to make recommendations based on the analysis of the contextual environment of Ghanaian construction SMEs, for improving health and safety management within construction SMEs in Ghana.

#### **1.4 ORGANISATION OF THE THESIS**

The structure of the thesis is made up of five sections: an introductory section; literature review; the research methodology; results of the research; discussion chapter; conclusions; and, recommendations for future research (refer to Figures 1.1 and 1.2 on the research process and how the chapters are related). The structure of the thesis is described as follows.

The first section of the thesis is a general introductory chapter, chapter 1. The chapter begins with a description of the construction industry in developing countries, the role it plays in nation building and problems facing it. The activities of construction SMES and health and safety in the construction industry are presented. This is followed by a section which presents

the rationale of the study and the research questions the study addresses. The aim and objectives the study intends to achieve are also presented.

The second section comprises chapters that present the context of the study and reviews literature on SMEs and health and safety. It is organised into three chapters—chapters 2, 3 and 4.

Chapter 2 presents the political, economic, socio-cultural contexts. The chapter begins with an introduction on the characteristics of the study setting followed by a description of the government regimes vis-à-vis policies affecting the construction industry. It presents the religious, social, and cultural environments and their influences on organisational cultures. The chapter includes a section on the construction industry of Ghana. The chapter ends with a wrap-up of the implications for health and safety in construction businesses and key research questions to be addressed.

Chapter 3 presents the literature on SMEs. The concept of SMEs is examined and a definition adopted for the study given. The main characteristics of SMEs are discussed with particular emphasis on how they relate to the construction industry and SMEs operating within the sector. This is followed by literature discussing the concept of strategic management as it relates to construction companies, particularly SMEs.

Chapter 4 presents literature on health and safety management. The chapter starts with a discussion of the institutional set up for implementing health and safety laws in Ghana, focussing on the implementation of health and safety standards on construction sites. This is followed by a discussion of the general literature on health and safety management in construction. Literature on approaches to health and safety management is reviewed, including cultural aspects of health and safety. The adoption of health and safety management practices within construction SMEs is commented upon and problems in health and safety management in developing countries highlighted. The relevance of approaches to health and safety management to construction SMEs is challenged and gaps in the literature commented upon.

The third section presents the research design and method—chapter 5. The section presents the research strategy and research design which underpin the research. The data collection methods and sampling techniques employed in the study are discussed in this section. A description of how access was gained to study participants is also included. The research process adopted for the thesis is also presented.

The fourth section presents the results of the study and also, a discussion of the results. It comprises chapters 6, 7 and 8.

Chapter 6 presents the results of exploratory interviews conducted within key institutions in Ghana. It also presents the results of a questionnaire survey administered to a sample of construction SMEs in the country. The health and safety management practices of the construction SMEs are presented in the chapter and key issues emerging from the survey form the subject of further exploration in chapter 7.

Chapter 7 presents the results of owner/managers' perceptions of and attitudes to health and safety in relation to issues identified in chapter 6. The chapter reports on semi-structured face-to-face interviews of owner/managers and documentary sources of data. The results presented also include data obtained through observations of processes at project sites. A summary of the chapter is presented including emerging themes based on the analysis of the two chapters.

Chapter 8 is a discussion of the emerging themes following from chapters 6 and 7. A synopsis of key issues following the discussions is presented. Recommendations for improving the health and safety performance of construction SMEs are presented.

The fifth section presents the study's conclusions and recommendations for further research—chapter 9. It presents the conclusions and lessons of the study, the contribution the study makes to knowledge and for improving health and safety at construction sites. The chapter also acknowledges the study's limitations and provides recommendations for further research.

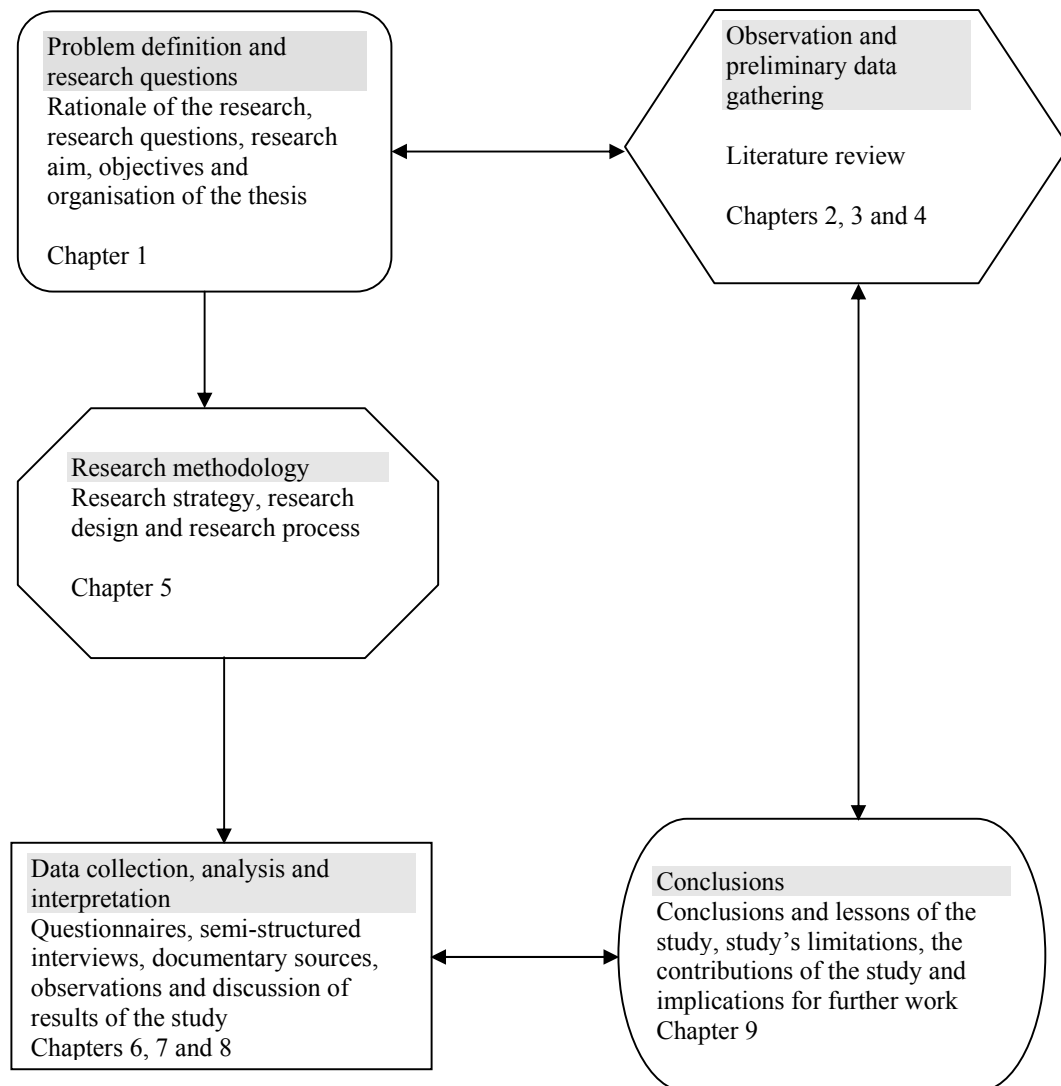


Figure 1.1 The research process adapted and modified from Sekaran (1984)

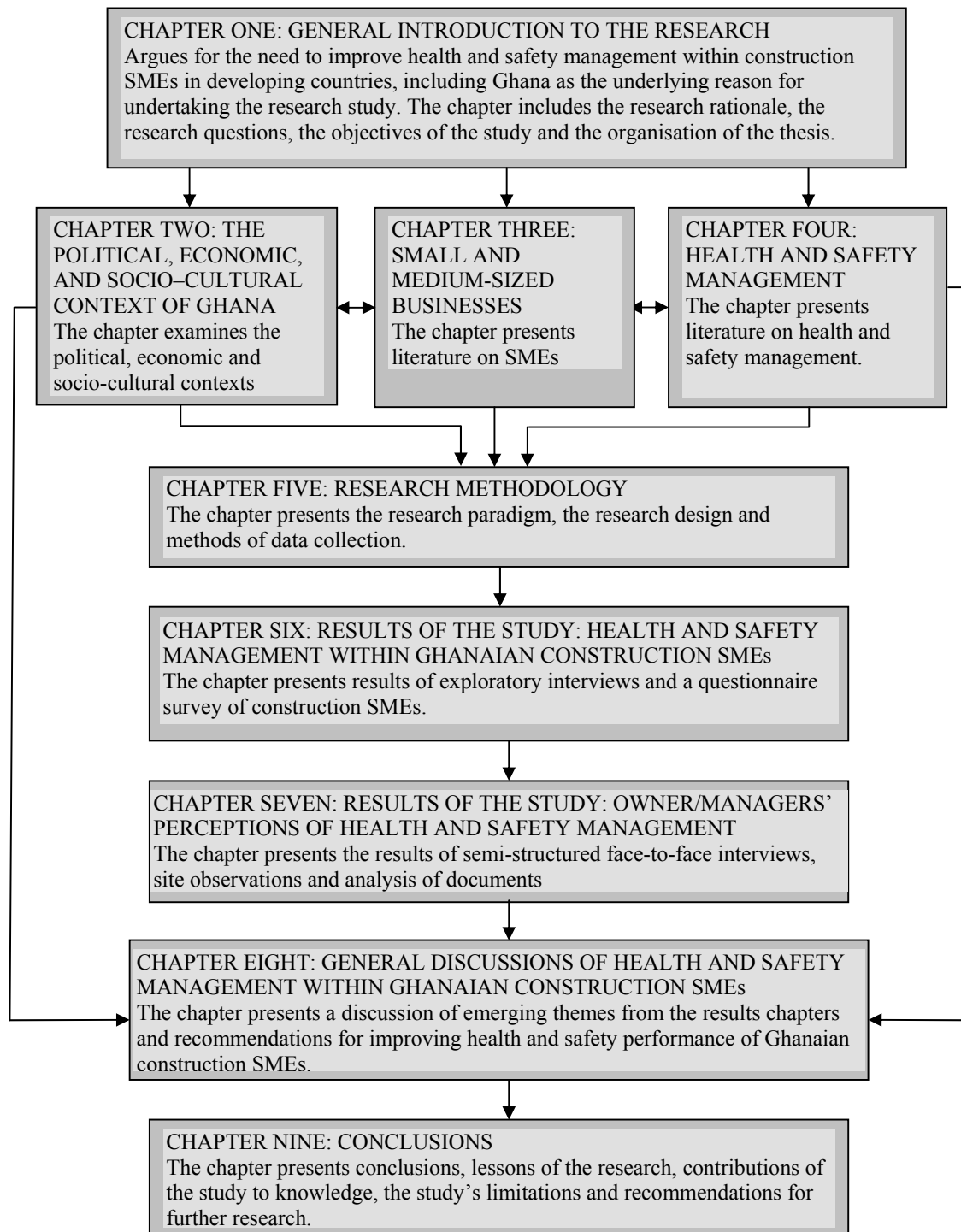


Figure 1.2 Organisation of the thesis

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## **2 CHAPTER TWO: THE POLITICAL, ECONOMIC AND SOCIO-CULTURAL CONTEXT OF GHANA**

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### **2.1 INTRODUCTION**

A detailed explanation of the character and nature of the setting is necessary to facilitate complete understanding of the study of health and safety within the construction industry in a given national context. This chapter, therefore, reviews the literature pertaining to the national setting. There is a description of the physical characteristics of the setting and this is followed by analysis of the system of governance in place in the study area. The institutional and policy structures of government right from the inception of British colonial rule to date are also highlighted national culture and the construction industry as they exist in Ghana. The implications of institutional structures, government policies, the socio-cultural environment and the extent to which these affect the management of construction SMEs and occupational health and safety are discussed at length.

Health and safety is set within organisations which themselves are situated within national boundaries. Since organisations have a culture which is informed by the beliefs and or value systems held by individual members of a nation, an elaboration of the national setting of the research is thus essential. This elaboration provides the background to health and safety management of construction SMEs in Ghana. The chapter presents the physical characteristics of Ghana, followed by the overviews of the economic and political climates of the country. The construction industry is described as well as the impact of government policies which have a bearing on the construction sector, and the implications of these policies on health and safety within construction SMEs, are highlighted. A summary of the chapter is given along with key questions arising from the literature discussions.

## **2.2 THE NATIONAL CONTEXT OF THE STUDY**

### **2.2.1 LOCATION AND CLIMATE OF GHANA**

Ghana is situated in the middle of the west coast of Africa and shares borders with three French-speaking countries. It is bordered to the north by Burkina Faso (formerly Upper Volta), to the west by Cote D'Ivoire, and to the east by Togo (Boateng 1966:3). To the south of the country lies the Atlantic Ocean and Gulf of Guinea (Figure 1). The Greenwich Meridian which passes through London also traverses the country at Tema. Its total area is 238,540 square kilometres (91690 square miles).

The climate of Ghana is tropical. The country experiences two climatic seasons, the dry season and the rainy season. The rainy season lasts roughly from April to September while the dry season lasts roughly from October to March. The northern part of the country experiences severe Hamattan (a desert dry wind blowing from the north east of the country lasting from December to March). Annual rainfall ranges from about 1100mm (43 inches) in farthest northeast to about 2100 mm in the southeast with the average low temperature is 20.5°C (69 Fahrenheit) and average high of temperature is 26 °C (79° Fahrenheit) (Boateng 1966:24-31). The northern part of Ghana is savannah grassland with few trees while the middle of the country has a tropical rain forest. The coastal regions also have savannah grassland. The vegetation of the north is threatened by desertification.

Important natural resources include the river Volta, Lake Bosomtwe, manganese, bauxite, gold, and timber. Recent oil explorations in the country also indicate the country has oil in commercial quantities (Government of Ghana 2007:5). The Volta River is formed at the centre of the country by the confluence of the Black Volta and the White Volta. The river has served as the source of the hydroelectric power for Ghana and its neighbouring countries. The main export commodities and source of foreign exchange for Ghana include cocoa, timber and gold.



Land area: 230,020 square kilometres  
 Area of water: 8,520  
 Population: 18.8 million (2000 population census)  
 Capital city: Accra  
 Currency: Ghana Cedi (¢)  
 source:  
<http://www.Ghanaweb.com/GhanaHomePage/geography/>

Figure 2.1 Map of Ghana

### 2.2.2 DEMOGRAPHIC FEATURES OF GHANA

The annual population growth rate of Ghana is 2.7-3.0 per cent (Government of Ghana (GOG) 2005). This is low, compared with most developing countries but could lead to many of the country's labour being unemployed if there is no corresponding improvement in the efficiency of labour markets in the country (Canagarajah and Thomas 1997). Like most developing countries, Ghana has a low literacy and high senior secondary school drop out rate. At the annual growth rate of 2.7-3.0, the estimate of the population in 2010 will be 22.7 million.



### **2.2.3 ETHNICITY**

The society is made up of five main ethnic groups; the Akan who occupy the central part of the country and the western parts of the coast of the country, the Ewe to the east, Mole-Dagbane which occupies the northern parts of the country, the Ga-Adangbe and the Guan occupy the middle and eastern parts of the coastal belt respectively. The subdivisions of each ethnic group share common heritage, history, and language. The national culture is therefore a mix of the culture of these major ethnic groups. Cultural and ethnic similarities exist between some ethnic groups and neighbouring countries. The Ewes are closely related to neighbouring Togo while the people of Northern Ghana are more closely related to the Sahelian countries such as Burkina Faso than the peoples of the coastal regions of Ghana.

At one time a British colony, Ghana is run by a modern state system inherited from British colonial rule. Governance is by parliamentary rule with democratically elected leadership. Institutions established by the constitution of the country aid the process of governance. The constitution supersedes all other interests and claims. The democratic process has, as it were, been hampered by a series of military juntas in the past. A traditional system of governance originating from the chieftaincy institution has survived up to modern times, with modification of the role traditional rulers played in the pre-colonial era. Chiefs now play an important role in the preservation of customary law, traditional value systems and in promoting developmental projects in their communities. However, the chieftaincy institution has been a source of persistent ethnic and clan conflicts because of desires for recognition of status and land ownership.

### **2.2.4 THE ECONOMY OF GHANA**

Like most developing countries, Ghana depends on agricultural production and primary exports. The coastal belt zone produces fish, staple foods such as maize, salt, pineapples, coconuts, cassava, palm oil, palm kernels and poultry. Salt and fish are mainly exported to neighbouring countries such as Burkina Faso, Mali and Niger while palm oil is exported not only to neighbouring countries, but also to some European countries and America.

The middle belt produces cocoa beans, timber, coffee, tobacco, palm oil, palm kernels, plantain, cocoyam, cassava and maize. Cocoa and timber, as noted earlier, are major sources of foreign exchange and these are produced in the middle belt of the country. Cocoa is one of the three major commodities in Ghana which generates over 70 per cent of Ghana's foreign earnings (Bureau of Economic Affairs 2002). The production process is labour intensive. Indigenes own the cocoa farms and a state-owned marketing board is responsible for marketing of the raw product (roasted cocoa beans). Farm labour is largely provided by migrant workers from the northern belt and also from neighbouring sahelian countries.

The northern belt of the country produces sheanuts, cotton, cashew, fibres, peanuts, yams, millet, tomatoes, guinea corn, rice, and animal husbandry. Cotton, cashew, sheanuts, tomatoes, peanuts, are cash crops grown in commercial quantities to feed cotton ginneries, shea butter processing plants and other factories mostly located in the northern parts of the country. The North remains the country's main source of protein supply because of a climate favourable to cattle, birds, sheep, and goats.

Smallholder farm systems are the main form of agricultural production with the government playing a supportive role by providing services to boost production and marketing of agricultural products. The Government makes significant investments in agricultural research and provision of relevant infrastructure to enhance productivity in the agricultural sector. Increasingly, agricultural productivity remains largely determined by the prevailing weather conditions (Nyanteng and Seini 2000). Yearly production of staple foods falls below consumption with the difference made up by importation of foods such as rice, fish products, wheat, poultry products and other processed foods.

The industrial sector is very diverse. Timber processing industries dominate the middle belt of the country producing various timber products for export and for the local market. The country possesses vast reserves of mineral resources making it the world's largest exporter of manganese. Mining is a significant contributor to GDP. The manufacturing industry includes an aluminium smelter plant, oil refinery, textiles, electricity production, construction and building materials, breweries, and pharmaceuticals. The service sector is dominated by retail

businesses which are established throughout urban centres of the country. Stock market which facilitates the development of a capital market assists businesses to raise capital through floatation of shares and bonds.

Ghana possesses a craft industry which is an important source of employment for the youth. Hand crafted articles are made for local consumption as well as for export. Handicrafts reflect the different cultures of the ethnic groups of the country. The Akans are well noted for handicrafts such as 'kente', sculptures and pottery whilst Ewes specialise in puppetry, beadwork and ewe-textile. The coastal parts specialise in pottery and ceramics. The northern parts of the country are noted for traditional baskets woven from straw, embroidered calabash, sculpture and leather handicrafts in the form of bags and sofas. Local handicrafts are produced by individuals some of who have registered their businesses. Handicrafts are sold to middlemen who in turn sell the products to export businesses in the handicraft sector.

Ghana's struggle to ensure economic growth has seen international organisations such as the World Bank and the International Monetary Fund (IMF) playing supportive and advisory roles in the implementation of economic reforms aimed at revamping the economy. The studies on the impact of economic measures have indicated that there is no consensus on the overall impact of these economic reforms on the Ghanaian economy. Joint assessments carried out by the European Commission and the International Labour Organisation in 1994 has shown modest achievements in the agricultural sector and the construction sub-sector (European Commission 1994:31-35). The achievements in the agricultural sector have been attributed to production incentive policies, improvements in the supply of agricultural inputs and rehabilitation of agricultural facilities such as feeder roads, transportation and warehouses. The achievements in the construction sector have been attributed to Government's increased expenditure in infrastructure provision. In contrast, macroeconomic measures assessed from 1983 to 1995 have shown that there has been a failure to achieve the desired economic growth (Alderman 1994, Aryeetey and Ahene 2005, Aryeetey and Harrigan 2000, Aryeetey and Tarp 2000:9, Killick 2000, Nicholas 2000, Thormi and Yankson 1985). Vanderpuye-Orgle (2004) maintains the view that the Economic Recovery Programme (ERP)

has led to huge capital inflows and a more efficient management of the country's resources which has yet to translate into measurable economic growth.

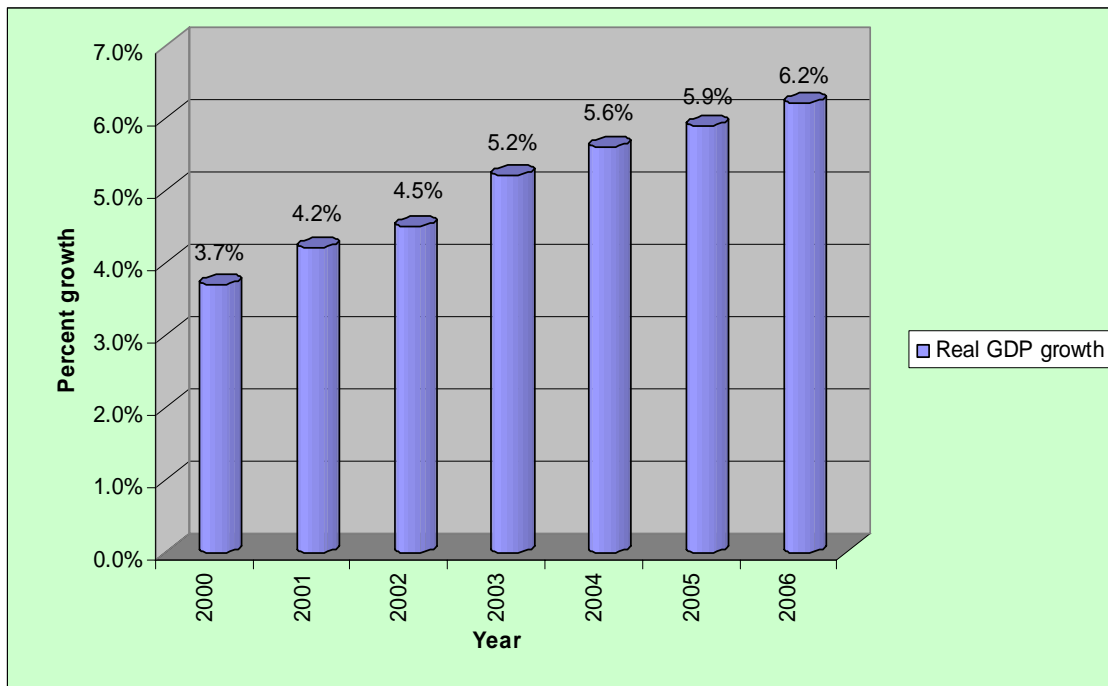
Whilst the forgoing findings are irrefutable, recent economic trends indicate that Ghana has attained a macroeconomic stability and modest economic growth under the Ghana Poverty Reduction Strategy (GPRS) (Government of Ghana (GOG) 2005). A survey of the impact of the GPRS in 2006 has shown that the Government's achievements in macroeconomic stability have had a modest impact on the livelihoods of households in the country (Government of Ghana 2006). However, relating the achievements so far to the Government's objective of attaining a middle income status by 2015 means more concerted effort in implementation of economic reform programmes is necessary if this goal is to be attained. Table 2.1 indicates agriculture's contribution to GDP is highest and registers significant improvements year on year over the five year period examined. The GDP indicates gradual upwards trend from 2000 to 2006 (Figure 2.2). Ghana relies on export trade of agricultural based products such as cocoa and lumber and precious mineral for foreign exchange. An enabling environment created through the elimination of export barriers has caused an expansion of the export trade in terms of numbers of businesses and the kinds of products being exported. Exports now include meat products, cashew, pineapple, and traditional handicrafts.

Despite recording moderate achievements in growth in recent years, there remains high levels of poverty in rural areas with the hardest hit being the three northern regions (Northern, Upper West and Upper East) (International Monetary Fund 2005). Access to basic social services such as safe water, basic education, roads, health care and electricity by the rural population in the country has yet to be achieved. The quality of working life in the country is partly a reflection of the state of the country's economy. With a minimum daily wage of about 1 GBP, many workers hardly can provide for the needs of their families. For an economic sector such as construction which is highly dependent on migrant labour from rural areas, the social and economic background of workers play a significant role in quality of working life including health and safety. This therefore, underscores the relevance of the socioeconomic context of the study setting to the present study.

Table 2.1 Composition and Growth of GDP by Industry, 2000-2004

<b>Sector</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
	(In percent of nominal GDP)				
<b>Agriculture</b>	<b>35.3</b>	<b>35.2</b>	<b>35.1</b>	<b>36.5</b>	<b>37.9</b>
Agriculture and livestock	22.0	22.3	22.4	22.5	22.1
Cocoa production and marketing	4.8	4.6	4.4	5.8	7.6
Forestry and logging	3.9	3.9	3.9	4.0	4.0
Fishing	4.6	4.5	4.4	4.3	4.2
<b>Industry</b>	<b>25.4</b>	<b>25.2</b>	<b>25.3</b>	<b>25.2</b>	<b>24.7</b>
Mining and quarrying	5.0	4.7	4.7	4.7	4.6
Manufacturing	9.0	9.0	9.0	9.0	8.7
Electricity and water	2.7	2.7	2.7	2.7	2.7
Construction	8.7	8.8	8.8	8.9	8.8
<b>Services</b>	<b>28.8</b>	<b>29.2</b>	<b>29.2</b>	<b>29.1</b>	<b>28.6</b>
Transport, storage and communication	4.3	4.4	4.4	4.4	4.4
Wholesale and retail trade, restaurants and hotels	6.7	6.8	6.9	6.9	6.8
Finance, insurance, real estate and business services	4.3	4.3	4.3	4.3	4.3
Government services	10.1	10.2	10.1	10.0	9.7
Community, social and personal services	2.6	2.6	2.6	2.6	2.6
Private non-profit services	0.9	0.9	0.9	0.9	0.9
Indirect taxes	10.5	10.4	10.4	9.2	8.7
<b>GDP at market prices</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
	(Annual percentage volume change)				
<b>Agriculture</b>	<b>2.1</b>	<b>4.0</b>	<b>4.4</b>	<b>6.1</b>	<b>7.5</b>
Agriculture and livestock	1.1	5.0	5.2	5.3	5.3
Cocoa production and marketing	6.2	-1.0	-0.5	16.4	29.9
Forestry and logging	11.1	4.9	5.0	6.1	5.8
Fishing	-1.6	2.0	2.8	3.0	3.5
<b>Industry</b>	<b>3.8</b>	<b>2.9</b>	<b>4.7</b>	<b>5.1</b>	<b>5.1</b>
Mining and quarrying	1.5	-1.6	4.5	4.7	4.5
Manufacturing	3.8	3.7	4.8	4.6	4.6
Electricity and water	4.5	4.3	4.1	4.2	3.8
Construction	5.1	4.8	5.0	6.1	6.6
<b>Services</b>	<b>5.4</b>	<b>5.1</b>	<b>4.7</b>	<b>4.7</b>	<b>4.7</b>
Transport, storage and communication	6.0	5.5	5.7	5.8	5.6
Wholesale and retail trade, restaurants and hotels	4.0	5.0	5.6	5.0	4.9
Finance, insurance, real estate and business services	5.0	4.5	5.5	5.2	4.8
Government services	6.0	5.0	3.6	4.0	4.4
Community, social and personal services	6.9	6.5	4.4	4.1	4.2
Private non-profit services	3.1	3.2	3.1	3.2	3.5
Indirect taxes	5.0	5.4	4.3	4.4	4.3
<b>GDP at market prices</b>	<b>3.7</b>	<b>4.2</b>	<b>4.5</b>	<b>5.2</b>	<b>5.6</b>

Source IMF Country Report (2005:7)



Source: Budget statement report (2007:32)

Figure 2.2 Real GDP growth rate

## 2.3 BRITISH RULE

### 2.3.1 POLITICAL INSTITUTIONS OF COLONIAL GOVERNMENT

The United Kingdom established its rule of Ghana (known as the Gold Coast before independence in 1957) in 1844 upon the signing of an agreement with traditional rulers along the coastal parts of the country to protect them from harassments of the Ashanti kingdom. The agreement empowered the UK government to ensure that peace prevailed in the then Gold Coast, to administer the colony, to enact laws and to facilitate commercial growth. The territory expanded northwards to include the modern day Ashanti Region and Northern Regions soon after the Asantes were conquered.

The Queen's appointed Governors ruled Ghana until 1957, when it gained independence from colonial rule. The colonial regime established a legislative council which sought to introduce a blend of the English Common Law system and traditional rule through the chieftaincy institution (Indirect Rule). A succession of appointed Governors of the colony

did, as it were, appoint certain chiefs to serve in the political institutional structure of the colony. Chiefs played an important role in legal matters relating to customs of the colony as well as being able to mobilise local labour to carry out community work (Amanor 2001:36). Colonial rule was not devoid of resistance from the indigenous people. Fierce resistance to colonial rule was initiated by chiefs and subsequently showcased by the elite (Rathbone 1992). Under British rule, a gradual transformation to self-rule was planned which saw the birth of two radical parties; the United Gold Coast Convention (UGCC) and the Convention People's Party (CPP). These were to steer the course of freedom and independence.

The infrastructural development plans of colonial administration emphasised transport infrastructure mainly involving considerable development expenditure on roads, harbours and railways (Cox-George 1973:116-117). This facilitated agricultural production of timber and cocoa and extraction of precious minerals. Construction works were carried out by large international construction businesses while maintenance works were carried out by the Public Works Department (P.W.D). The P.W.D. was headed by a provincial engineer. The need for social infrastructure in the colony was basic to economic development and welfare of the territory. Significant expenditure went into education and health care (Cox-George 1973:132).

The colonial rule emphasized agricultural production and mineral extraction to feed parent industries in the UK. Cocoa was the main agricultural cash crop while gold, manganese, bauxite and aluminium were minerals which were in abundance in the colony. Colonial institutions were therefore developed to facilitate the production of these raw materials. Road network to other parts of the colony, particularly the then Northern Territories (Northern Ghana), was what was essentially needed to facilitate their administration. Manufactured goods were mainly imported into the colony for consumption. The economy was dominated by large foreign trading businesses and mining companies. Local entrepreneurial capacity was low and limited to retail business and rural agricultural businesses.

### **2.3.2 IMPLICATIONS OF COLONIAL RULE ON THE SOCIO-CULTURAL LIFE OF GHANAIS**

Colonial rule established a dual economy in which raw materials were produced in the country for export and manufactured goods imported into the country for consumption (Killick 1978:3, Seidman 1978:11). The establishment of heavy industries was not of priority to the colonial administration, instead emphasis was put on building physical infrastructure to facilitate economic development (Cox-George 1973:14). A few large businesses operated in the manufacturing sector to process raw materials into semi-processed ones for export overseas where they were transformed into finished manufactured products. The investment of capital development of natural and human resources was to boost the export sector of the economy. One significant outcome of this was to make the country become overly dependent on exportation of raw materials which were mainly agricultural products or mineral ore.

The execution of physical infrastructural projects was carried out largely by foreign firms. The Public Works Department was responsible for the supervision and construction of housing. Expatriate staff worked in the department because of the non-existence of experienced and qualified indigenous labour. Working conditions were dictated by foreign standards. Thus, local labour, which constituted the bulk of unskilled labour, was subjected to working and living under poor conditions at the time. A primordial occupational health and safety management only existed with respect to expatriate staff. Town council medical officers responsible for health and safety concerns of expatriate staff oversaw the general safety of the entire labour force at the Public Works Department.

Culturally, colonial rule led to disruptions and distortions of native cultural practices. Hawkins' (2002) example of the imposition of chieftaincy on the LoDagaa of Northern Ghana serves as a very good reference point. The imposition of the chieftaincy, in this instance, led to an erosion of the influence of traditional elders and earth priests in that traditional area. Other traditional practices such as style of dressing, oral traditions, use of cowries have undergone changes as a result of colonisation. In Hawkins' (2002) view, colonial rule denied the natives the right to describe their culture in their own terms and



“consequently created unresolved cultural, political, religious, and social tensions that continue to affect their capacity to regain sovereignty”.

The policies of colonial government, where it was practicable, encouraged the existing traditional institutions and value systems to facilitate the smooth administration of the colony. However, this did not prove to be always successful as the educated elite competed for political power which, by tradition, was the terrain of traditional rulers. Traditional value systems of ownership were replaced with Western land tenure systems. Resistance from chiefs and prominent landlords led to a disastrous failure of the implementation of the western land tenure system.

The era of colonial rule also saw religious colonisation of the indigenous society in Ghana by Christian missionaries. Christianity began at the coast and spread inland as far as to the Northern Territories which were already under the influence of Islam<sup>1</sup>. This similarly had an impact on the lifestyle, beliefs, language and customary practices of the Gold Coasters and this has transcended to present day Ghana. Traditional religion was demeaned as inappropriate by all standards and evil in the sight of God.

### **2.3.3 HEALTH AND SAFETY CONCERNS DURING COLONIAL ERA**

The focus of the colonial government was on raw material production through foreign companies using a mixture of foreign skilled and unskilled local labour. Early factory production methods created work related hazards which needed to be controlled. Hence the Factories Ordinance 1952 was passed to provide a code of protection for factory workers. The implementation of the law in the mining industry where workers were exposed to serious hazards to their health was lax. According to Dumet (1993), occupational health and safety was neglected by government and mining companies resulting in high mortality rates among

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<sup>1</sup> Islamic influence came through North Africa with the first point of entry through present day Upper West Region settling at Laribanga. The Northern parts of Ghana, as a result, have more of the inhabitants practising the Islamic faith than the southern and coastal parts of the country.

migrant workers. The first established hospital was the Korle Bu Hospital with no occupational health unit at the time.

Conditions of service of miners, railway workers and other occupations were poor, resulting in an onslaught of strikes during the period. These strikes were viewed by the Gold Coast Government as being driven by political motives rather than concerns for improved working standards and working relations. As Rathbones (1992:13) has expressed, “the Gold Coast was not therefore perceived in London or in the secretariat in Accra as the quiescent, co-operative and productive colony that its governor wished to present it”. Laws were passed to prevent workers from embarking on strikes because of political ambitions. The Trade Union Ordinance 1941 and Trade Dispute Ordinance 1941 were passed in this regard. A labour department established in 1938 was responsible for matters affecting labour in the colony. These laws formed the foundation for modern Ghanaian trade union movement (Anyemedu 2000).

## **2.4 POST INDEPENDENCE RULE**

### **2.4.1 EARLY POST INDEPENDENCE ERA (1957-1970)**

Ghana was the first country in sub-Saharan Africa to gain independence from British rule in the year 1957 led by Dr. Kwame Nkrumah, leader of the Convention Peoples’ Party, the party that won the general election in 1957. Later in 1960 Ghana attained a republican status. At independence, the government inherited an economy which, in essence, was one in which raw materials (mainly agricultural and minerals) were exported and manufactured goods imported into the country for domestic consumption. The economy was dominated by large trading and mining companies and other associated institutions. As the first country to become independent in Sub-Saharan Africa, it was a test case for other countries of the region. Seidman (1978:4) states the first president of independent Ghana’s acknowledgment of the challenge which the country must live up to:

“The success or failure of our efforts.....extend far beyond the frontiers of Ghana itself. A failure on our part would have tragic consequences for other African territories striving towards independence. We must not fail. We shall not fail”.

The Nkrumah government first embarked upon infrastructural development to attract foreign investment and later, in what may be termed a state intervention, a process of industrialisation. These moves resulted in a large number of state-owned enterprises in agriculture and industry (Garlick 1971, Killick 1978, Ray 1986, Rimmer 1992).

The first development plan was guided by the report written by Professor W. A. Lewis<sup>2</sup> for the Government. The proposals emphasised the expansion of infrastructure as a means of attracting private enterprises. The Lewis Report emphasised the production of local foodstuffs to ensure the country was self sufficient in food thereby increasing savings to finance industrialisation and to release labour for industry. The infrastructural foundation required for industrialisation was beyond what government could maintain or even perhaps needed (Seidman 1978:11). A free primary education was available for all by 1960. Housing projects were initiated to accommodate the increasing labour migrating to the capital city from every nook and cranny of the country. The most important projects were the Hydro-electricity Volta Dam Project and the Tema Port Project. Inherited colonial institutional structures were reorganised to facilitate implementation of the government's development policies. The Public Works Department was restructured and named the Ghana National Construction Corporation in 1959 (Edmonds and Miles 1984:ch3).

To ensure that Ghana became an industrialised nation within a short period of time, a seven-year development policy was launched. This development plan was named 'Nkrumah's Seven Year Development Plan'. The objectives of the seven-year development plan included inter alia;

- the private sector and government teaming up to pursue a common economic agenda; and
- to encourage Ghanaians to establish their own businesses (encouraging the development of entrepreneurial capacity and SMEs for that matter).

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<sup>2</sup> W.A. Lewis "Industrialization and the Gold Coast" Government Printing Department (Accra, 1963). Professor W. A. Lewis of University of Manchester (England) was invited to the Gold Coast in 1951 prior to independence to advise the Government on the possibilities of developing industry.

The government advocated a mixed economy with the private sector playing an active role in the economy of the country. A survey carried out in 1963 indicated that the foreign investments remained concentrated in three sectors; mining and quarrying, trading, and petroleum. Manufacturing contributed less than 12 per cent of the total foreign investment. According to Seidman (1978:11-19), the contribution of private industrial plants established in the 1950s to the economy was primarily seen as training of personnel. The failure of the private sector in contributing to structural change and industrial growth led to government's direct participation in productive activity.

Government policy at the time recognised the role of private indigenous enterprises in Ghana's economy. The Ministry of Rural Industries established in 1965 was responsible for the development of small businesses in the private sector. The period from 1960-64 saw a relatively high economic growth attributable to rapid industrialisation induced by the implementation of import substitution policies. The period after 1964 saw a gradual decline in economic growth which economic analysts attribute to "over-investment" and corruption (Baah 2003). Nkrumah's government was overthrown in a coup d'état on 24<sup>th</sup> February 1966 by the armed forces in cooperation with the police who later set up the National Liberation Council (NLC) to rule the country.

Under the NLC, the Ministry of Rural Industries merged with Ministry of Industries—a State Owned Enterprise (SOE). The government created new state owned enterprises as part of its industrialisation and rural development policy. A rural development fund, financed through levies of public servants was launched. A decree was passed making certain areas of trade reserved only for Ghanaians. Elections conducted in 1969 brought into power a civilian government marking the beginning of a second republic.

The second republic demonstrated unwavering commitment to a policy of open economic drive. Accordingly, it abolished import controls. It instituted development levies and cuts in civil servants' perks. Killick (1978:303) observed that the government of the second republic would have successfully brought market forces into play had it not been disrupted by a

military takeover. Austere measures, dissolution of the TUC and dismissal of 568 public servants led to loss of popular support for the government of the second republic among the urban populace (Gyimah-Boadi and Jeffries 2000:57). Not surprisingly, its demise was therefore welcomed when a military junta intervened to reverse the policies it had sought to implement.

#### **2.4.2 LATE POST INDEPENDENCE RULE (1971-2001)**

##### **Succession of military regimes**

The second republic came to an abrupt end on 13<sup>th</sup> January 1972 in a coup d'état led by Colonel Ignatius K. Acheampong as head of the Supreme Military Council (SMC). The SMC, in affirming its dislike for policies its predecessor sought to implement, summed up the line of action it intended to pursue thus:

“The political frame of reference which guided your action and your advice especially in the past two years must be cast into the rubbish heap of history. This means a departure from the laissez-faire, so called free market economy and the institution of effective planning in the allocation and utilization of resources<sup>3</sup>”.

The Acheampong regime maintained close relations with the TUC, abolished the development levy instituted by its predecessor, re-valued the cedi and instituted measures to undo the austere measures previously instituted by the Second Republican Government of Ghana (Emmanuel and Paul 1980). The regime pursued a philosophy of national self-reliance. In line with this philosophy, it repudiated all foreign debt which were viewed by the SMC as fraudulent, a move labelled in native Ghanaian language as ‘yentua’ meaning we shall not pay. The period may be described as one of deteriorating economic conditions characterised by price hikes and severe shortage of basic goods and services. In an attempt to prevent the economy from further deterioration, the Acheampong regime was ousted from office in a palace coup d'état in 1978 led by General F.W.K. Akuffo. The new regime's pledge to handover to a civilian rule within a short space of time, did not appeal to the junior officers of the Armed Forces who wanted to see the rulers of the dear nation account for the

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<sup>3</sup> Acheampong, 1973 P. 31 speeches and interviews, Chairman of the Supreme Military Council.

lapses in their rule. This dissatisfaction, led to an uprising culminating in yet another military ruled headed by Flight Lt. Jeremiah John Rawlings in 1979.

The Acheampong regime was the longest reigning regimes among the three aforementioned regimes and therefore warrants some detailed comment. The regime sought to foster national unity through the creation of a ruling government by a committee composed of a number of heads of stakeholder groups to steer the political affairs of the country. The groups included the military, police, chiefs, trade unions, farmers, Christian, and Moslem councils.

Regional development corporations were established to implement development plans in the nine regions of the country. State control of the economy was strong, particular mechanisms included; import controls, price control and subsidisation of basic imported goods (Buame 1996, Gyimah-Boadi and Jeffries 2000). The government launched a development plan entitled Guidelines for the Five-Year Plan aimed at increasing productivity of the economic sectors but this had little impact because of late implementation (Huq 1989). In Huq's (1989:11) view, the implementation of the Five-Year Plan was limited to its use as a framework towards achieving food self-sufficiency. The regime pursued an import substitution industrialisation policy similar to that of Nkrumah's government.

To boost agricultural productivity, it instituted Operation Feed Yourself (OFY) and Operation Feed Youth Industries (OFYI) programmes (Killick 1978). The OFY programme targeted the production of food stuffs for home consumption while OFYI was meant to encourage the production of agricultural raw materials such as cotton, fibre, sugar cane to feed Ghanaian industries. A state farming system was introduced with the aim of boosting local production of food stuff. The formation of farmers' cooperatives was encouraged by providing easy access to credits and farm inputs for their members. Commenting on the agricultural policies of the period, Nyanteng and Seini (2000:269), describe the period as one of 'hope for agricultural productivity development in Ghana'.

The economy steadily deteriorated throughout the 1970s under the forces of high rate of inflation, poor financial management, declining production and exports, corruption and

increasing criminal activities (World Bank 1984b:xv-xvi). The Supreme Military Council II (SMCII) and the Peoples National Defence Council (PNDC) took over the reigns of government, the former regime led by Akuffo and the latter by Ft Lt J.J. Rawlings (Gyimah-Boadi and Jeffries 2000). The two regimes sought for a return to civilian rule culminating in a successful handover to a civilian government marking the beginning of the third republic.

### **From third to fourth republics**

The government of the Third Republic led by Dr Hilla Limann inherited an economy at the verge of collapse, physical and social infrastructures were poor as a result of lack of attention over the years. The government acted in line with the advice of the IMF and introduced measures in an attempt to rebuild the economy of the country. In line with this, from the time of its assumption of power to rule the country, until its dethronement in 1981 in a coup d'état, a five-year development plan, entitled Government's Economic Programme, was prepared by the Limann Government. This development plan remained unpublished because of the overthrow of the Third Republican government in a bloody 'revolution' led by Ft. Lt J.J. Rawlings.

With debts mounting, unemployment growing and the performance of the economy of the country ebbing, dissatisfaction of the performance of government continued to generate tension within the military. A Provisional National Defence Council, under the chairmanship of Rawlings, took over the reins of government in 1982 from the Limann Government. The IMF and World Bank were approached to assist in bringing the economy back on track. Despite the commitment to private sector development by the PNDC from 1982 to 1992, attacks on private businessmen who were seen as promoting 'kalabule' (which refers to the illegal buying and selling of officially controlled goods) resulted in many businessmen fleeing the country.

Macroeconomic measures adopted to stabilise the economy and the implementation of structural adjustment to correct price distortions and disincentives to economic growth were stringently implemented in 1983, dubbed the Economic Recovery Programme (ERP). In line with the government's broader Structural Adjustment Programme (SAP) are the

implementation of trade liberalisation policy and the Public Sector Reform Programme. These policies resulted in many State Owned Enterprises (SOEs) privatised, saw to the establishment of business support centres to support SMEs and the Ministry of Private Sector Development put in place to provide an enabling environment for the private sector of the economy.

The Ministry of Private Sector has the responsibility of structuring the private sector to facilitate innovation and entrepreneurial activities within the sector and public-private sector partnership. Recognising the importance of SMEs in the economy, the National Board for Small Scale Industries (NBSSI) was formed under the Ministry of Private Sector Development to give assistance to SMEs through the setting up of Business Advisory Centres (BACs) and Fund for Small and Medium Enterprises Development (FUSMED).

A noteworthy development is the improvement in business-state relationship after the fourth republic was inaugurated in 1993 under the National Democratic Congress (NDC). However, the economy remained vulnerable to external shocks. The New Patriotic Party (NPP) wrestled power from the NDC, and continued the latter regime's focus on private sector as an engine of growth. It further launched the Special Presidential Initiative, aimed at invigorating the private sector.

Small and Medium-sized businesses have been the focus of economic reforms starting from the 90s. SMEs needed to respond to the markets formerly dominated by the public sector businesses and to take advantage of surplus labour created by down sizing. William F. Steel (1977), Page and Steel (1984) and Thormi and Yankson (1985) have commented on Ghanaian SMEs' capacity to respond to market opportunities created because of government policies. The works of Steel (1977) and Page and Steel (1984) demonstrate that Ghanaian SMEs have the capacity to promote economic growth and to create new jobs. However, Thormi and Yankson (1985) challenge these assumptions by arguing that economic growth and employment creation are not immediately achievable by SMEs.



A more recent work by Kragelund (2005:27) suggests that Governments' emphasis on macroeconomic policies, stabilization and extensive privatisation has failed to create a dynamic private sector. This, by extension limits SMEs contribution to the goals of employment and wealth creation. Poor institutional environment is cited to be a contributory factor to the failure of the private sector to respond to the needs of the people of Ghana (Amponsah 2000:30). In support of the view that the private sector has not been dynamic, Kragelund (2005:29) has pointed out that there have been inadequate incentives for private enterprises.

Various constraints to entry and growth of SMEs have proved insurmountable to SMEs. The hopes of expanding their markets are dimmer and dimmer, so it is with the fulfilment of their role of economic growth and job creation. Aryeetey et al., (1994) found that while SMEs demand for finance is very high, banks generally showed little interest in advancing credits because of high transaction costs and risks in SME lending. Other constraints hampering the growth of Ghanaian SMEs are the persisting regulatory barriers and high cost of doing business. The Gross Domestic Product (GDP) since the implementation of the ERP over 20 years ago is in the 4 to 5 per cent range and significant changes in the structure of the economic are yet to be realised.

#### **2.4.3 EFFECT OF GOVERNMENT POLICIES ON THE OPERATIONS OF CONSTRUCTION SMES**

Government policies have some implications for business operations in SMEs. For instance, the diversification of state owned construction businesses means SMEs must face the challenge of expanding their market to include markets formerly dominated by state owned enterprises (SOEs) in the construction sector. One significant impact on SMEs of economic policies of the late post independence era is an increased competition which SMEs faced in the country. For instance, Aryeetey et al. (1994) in their study of the performance of Ghanaian SMEs in the period following liberalisation found that the performances of 12.5% of SMEs in the study they conducted were severely hampered by competition as a result of this policy. Owner/managers therefore need to develop their capacity to enable them to compete successfully in the light of such economic reforms. Two decades after

implementation of policies aimed at stimulating the growth of the private sector, many SMEs still face severe competition with little expansion in their markets. The removal of regulatory barriers led to the establishment of a huge number of foreign businesses and domestic businesses. This has led to the supply side of construction products outpacing demand.

Human resource issues such as training of staff of SMEs coupled with difficulties in accessing finance and other resource constraints, limit their capacity to explore new markets created by diversification of SOEs. On finance, Buame (1994:172) noted that the inadequacy of, and inaccessibility to financial resources from financial institutions, compel business owners in Ghana to rely on non-bank sources for business start-up capital. Under such constraints, managing different aspects of business operations including health and safety, is a daunting task for owner/managers.

High tendering costs worsens the plight of owner/managers of SMEs in the construction industry. Several criteria must be met in order for a tender to be compliant with bidding requirements, compelling owner/managers to belong to a strong 'old boy's' network and to develop strong friendship networks as tools for dealing with state bureaucracy. The average number of documents required in order for a contractor to submit a tender that meets bidding requirements, is in the region of 15 to 25. The cost of unsuccessful tenders passed onto subsequent ones, can be therefore prohibitive.

Competitive tendering, as contained in the Public Procurement Act, 2003 (Act 663), has become the norm in managing expenditure on physical development projects in the public sector because of requirements of transparency and accountability in the management of public finance (Anvuur et al. 2006). This is likely to result in under pricing by many SMEs in a bid to win contracts and subsequently not performing upon award of a public contract (Stiedl and Tajgman 2003).

## **2.5 NATIONAL CULTURE**

The influence of culture on social phenomena received the attention of authors including Geertz (1973), Hofstede (1980), Deal and Kennedy (1982) Handy (1985) and Schein (1985).

The work of Geertz (1973) borders largely on the role of thought in society. In Geertz's view, symbols guide human action. The function of culture is to impose meaning on the world and make it understandable. The task of the anthropologists in his view is to interpret the guiding symbols of each culture. Deal and Kennedy's (1982) work concern organisational culture. They defined culture as "the way things are done here". They suggest organisations can be distinguished on two key dimensions; feedback and risk. Based on these dimensions all organisations can be classified into four types; the tough – guy macho culture, the work hard/play hard culture, the bet your company culture and the process culture. Handy's (1985) prime work also concerned organisational cultures. He identified four cultures of organisations; power culture, role culture, task culture and person culture. Schein's (1985) model of organisational culture suggests organisational culture can be viewed from three cognitive levels. The first level is the physical aspects of organisations and include; furniture, style of dressing and other visible aspects. The second level is company slogans and mission statements which the organisations profess to abide by. The third level is organisations' tacit assumptions which may often not be apparent to all the members of the organisation and outsiders, particularly researchers. Hofstede's (1980, and 2001) works concern national and regional cultures and how these affect organisations. His works are particularly, relevant to the present study considering the national context of the study.

The authors stated in the preceding paragraph agree on culture as an important facet, which should not be ignored in the study of phenomena within a particular national or community context. The concept of culture is confusing and difficult because of the wide range of possible usage (Schein 1985:12-13). A common feature of all definitions is that culture provides a set of cognitive codes whereby the otherwise meaningless behaviour and actions are made meaningful (Hofstede 1980). What is real is subject to our cultural disposition; thus, what is a reality in one social setting may not necessarily be so in another. Reality (physical, social, or individual) is therefore dependant upon cultural assumptions.

Within the social realm, culture can be used to describe relationships between groups of people within a given community as well as between them and their environment. These relationships are based on shared assumptions that develop over time to solve basic problems

that people face as defined social units and in their adaptation to the physical environment (Schein 1985, Schneider 1989). Hofstede (2001) suggests there are five basic problems facing humanity that present distinct dimensions of culture described below:

- Power distance (PDI) addresses the problem of human inequality in society. Inequality arises in areas such as wealth distribution, power and prestige. The existence of inequality in organisations influences subordinate-boss relationships. Power distance measures the extent to which less powerful members of a society accept and expect that power in institutions and organisations is distributed unequally. In other words, power distance reflects the way inequality in society is approved by members of that society.
- Individualism versus collectivism (IDV) measures the degree of integration of individuals into groups. In a society where individualism is high, ties between individuals are loose and for one with a relatively low individualism, the ties are stronger. An example of the latter society is one in which extended familial relationships exist such as in many sub-Saharan African countries. Here, from birth, individuals are members of an extended family comprising uncles, grand parents and aunts who play a vital role in the individual's upbringing.
- Masculinity (MAS) indicates the extent to which the dominant values in the society are characterised by masculine roles or emphasise feminine roles. Masculine roles include assertiveness and ego goals like desire for wealth. Feminine roles include qualities such as will to help others, sympathy and support for the less privileged in society.
- Uncertainty avoidance (UAI) relates to the problem of having to face uncertainty about the future. Means to cope with uncertainty include technology, law and religion. Uncertainty avoidance is a measure of the extent to which a society tolerates uncertain and ambiguous situations and employs means to deal with these situations. Societies that exhibit high uncertainty avoidance cultures tend to minimise uncertainty generating situations by means of strict law, regulations and security measures. In religious and philosophical ways, such cultures will tend to believe in absolute truth. On the contrary, societies with low uncertainty avoidance will be accommodative to opinions that they are unfamiliar with. Uncertainty avoidance may create a strong

inner urge in people to work hard in order to protect themselves against eventualities in the future.

- Long- versus short-term orientation (LTO) measures the extent to which virtuous living in a society is a goal, independent of any religious justification (Hofstede 2001:351-370). It relates to two poles of virtues regardless of truth that are well documented in the teachings of Confucius. One pole considers perseverance and thrift and the other, respect for tradition and fulfilling social obligations.

Hofstede's (2001) analysis of survey responses of 116,000 questionnaires involving 72 countries in the world has yielded country profiles based on the five cultural dimensions. Ghana features in a cluster of sub-Saharan African countries namely Nigeria, Ghana, and Sierra Leone. The results allow comparisons on the five dimensions for the countries covered in the survey. The profile of the three West African countries is given in Figure 2.3.

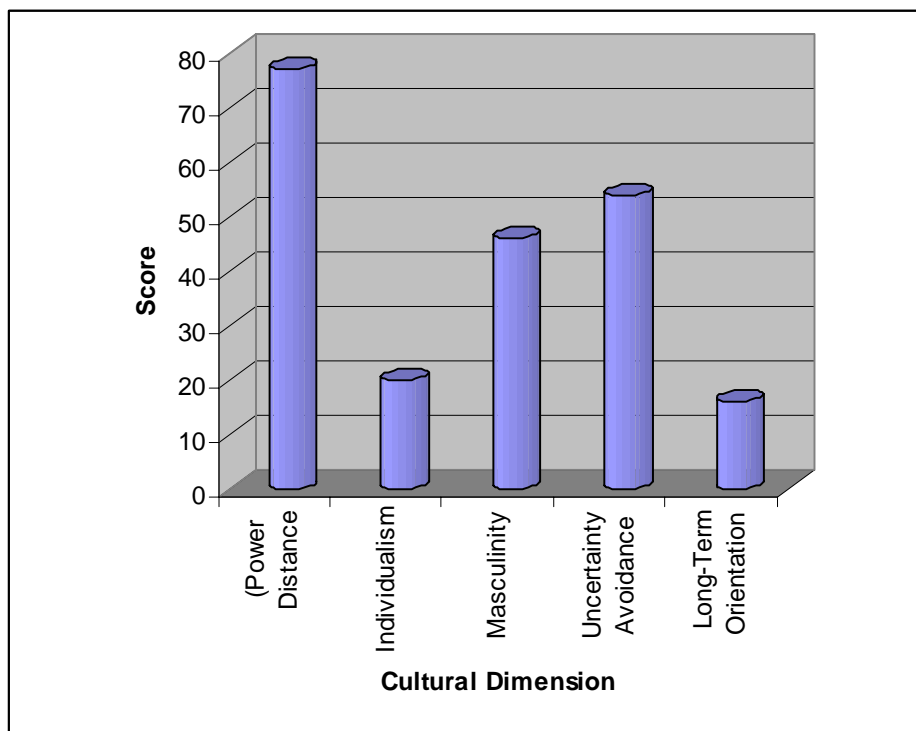
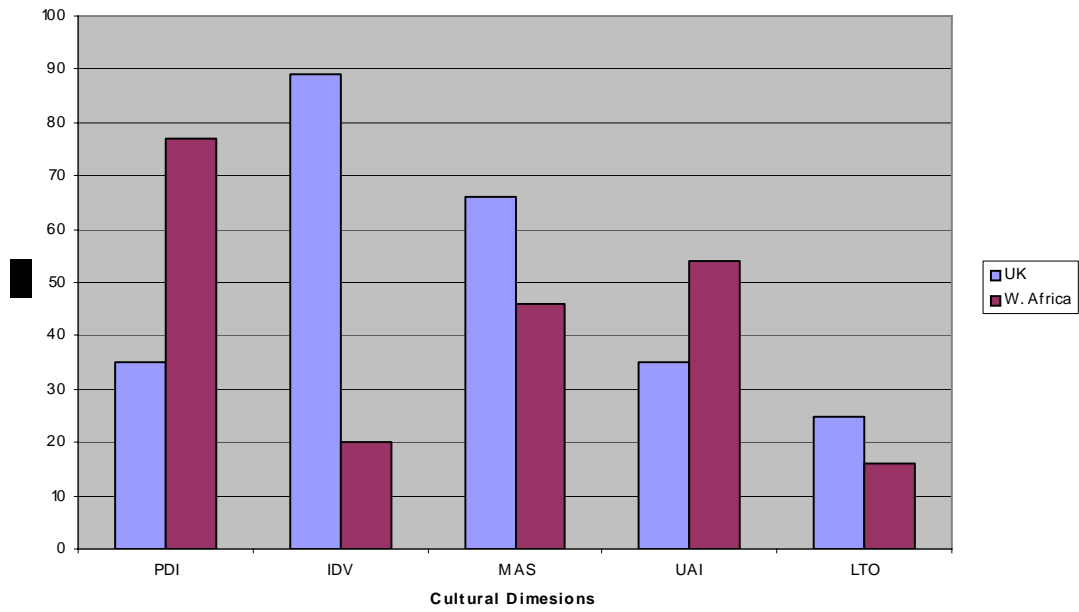


Figure 2.3 Profile of West Africa based on Hofstede's cultural dimensions

A comparison of a masculine and individualistic society such as UK and the three West African (Figure 2.4) shows West Africa as a relatively feminine and collectivist society with a relatively high power distance.



PDI=Power Distance, IDV= Individualism index, MAS= Masculinity, UAI= Uncertainty Avoidance, and LTO= Long-term Orientation

Figure 2.4 Cultural dimensions of W. Africa and UK

Values, symbols, heroes and rituals are visible manifestations of culture. Within a given national context, these manifestations of culture closely mirror the national culture (Hofstede 2001). The extent to which the cultural institutions of Ghana influence social processes within the country have been emphasised (Buame 1996, Kuada 1994). The rest of the discussion in this section gives a description of the national culture of Ghana.

### 2.5.1 RELIGION

The religions of Ghana are the most challenging features of its culture (Goody 1975). Ghana has witnessed the growth of Christianity and Islam and a decline in the numbers of people professing their faith in traditional African religion. The proportion of Ghanaians practising Christianity, Islam, and other religions (of which Traditional African religion has the greatest

numbers) stands at 63%, 16% and 21% respectively (Hofstede 2007). The influence of religion is a complex one considering the aggregate impact of these religions on the average Ghanaian's life. While the influence of Islam and Christianity is tremendous, underlying traditional value systems stemming from an undeveloped traditional African religion are strongly held by natives irrespective of their religion. These values include: communality; respect; kindness and love; harmony and reciprocity; and, the need to work hard. Inculcation of these values in the young is mainly through folklore, stories, and exemplary life of elders. The Ghanaian is therefore wary about life because of tomorrow and is inclined to think the good deeds of today form the storehouse from which one receives future rewards. Traditional religion remains largely the hub of social life of both urban and rural populace. Values, morality and justice in the Ghanaian social system derive their basis in traditional African religion.

### **Christianity**

The Christian religion was introduced to Ghana and the West coast of Africa in about 1824 by the Basel and Wesleyan missionaries. Contemporary Christianity in Ghana has grown at a faster rate than other religions and is the dominant religion in the southern part of the country<sup>4</sup>. Christian denominations are basically of two kinds, namely, churches which have their origin in Western countries and indigenous spiritual ones.

Efforts at Christianization of the nation have largely relied on dissuasion of natives from practising traditional African religion which have, until a few decades ago, been generally viewed by Westerners as wrong. Opoku (1978:167) has pointed out that early missionaries demanded that converts denounce traditional religious beliefs and practices as evidence of their conversion and renewed relationship with God in line with Christian teachings. Indigenous spiritual churches including charismatic ones are growing at a faster rate than orthodox and Pentecostal churches. This trend reflects, partly, people's need for security in

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<sup>4</sup> Early Missionary activities were confined to the coastal regions of Ghana which came under British colonial rule earlier than the rest of Ghana. Spread of Christianity in the northern part of Ghana was impeded by Colonial Government, a move to prevent possible Christian-Muslim conflicts.

the light of growing socio-economic problems facing the average Ghanaian. Spirit possession and exorcisms are important sessions in prayer camps and meetings whilst prayers for fertility, money, are 'blessings' that take precedence over the Biblical fruits of the spirit.

Churches continue to play an important role in the country's development agenda. This can be seen in the number of NGOs affiliated to churches that are actively engaged in encouraging rural enterprise and in the development of social infrastructure in the country. Some level of understanding is starting to emerge as some Christian denominations, particularly the orthodox churches, are beginning to blend some traditional practices that are acceptable to the Christian faith into ecumenical thinking through a process of 'acculturation'. Christians are showing higher levels of tolerance to other religions than before.

### **Islam**

Islamic influence, unlike that of Christianity, dates far back into pre-colonial days and is mainly dominant in the Northern parts of Ghana. Historically, Islamic merchants and Muslim scholars have been the sole factor in the spread of Islam in Ghana (Goody 1953, Iddrisu 2005, Wilks 1964). Towns like Salaga and Wa in Northern Ghana have a long standing history as trading centres and have therefore developed as strong Muslim towns. Islamic education in the Northern towns of the country did not incorporate Western education until the late 1950s when the Ahmadiyya Muslim Movement opened a number of schools with curricula on Arabic education and subjects in the Western educational system.

### **Traditional African religion**

Traditional African religion continues to play an important role in the Ghanaian society. In traditional region, there are no written documents that give account of creation, God, and prophets as is the case with Islam and Christianity. Instead, rules, rituals and practices are passed from one generation to another through oral histories which formed the main source of knowledge. Traditional religion among Ghanaians is typified by a belief in the spiritual world and its relationship with the temporal material world, coupled with the principles of morality and ceremonial worship. Despite the tremendous impact of Western religions and Western



thought, traditional religion remains important, politically and socially. Explaining the persistence of traditional religion, Salm and Falola (2002:39) argue that individual commitment to the well-being of extended family, lineage, and community is a driving factor for adherence to traditional religion. Although individuals may profess their faith as Christian or Muslim, majority may still maintain traditional religious beliefs and accept related practices (Adongo et al. 1998).

There exist communalities in traditional religious beliefs in Ghana, particularly the belief in the hierarchy of spiritual beings. In traditional Ghanaian religion, Supreme God as in Christian and Muslim religions is at the top of the hierarchy and rules over the universe. This God, known as Onyame (Akan), Nawuni (Manprusi), Nyɔɔmɔ (Ga) and Mawu (Ewé), Eboore (Gonja), We (Katsina), possess essentially the same attributes ascribed by these and other ethnic groups not mentioned here, of Ghana (Opoku 1978:14-25). Examples of these attributes include; omnipotence, omniscience, goodness and justice. Also central to traditional religious belief is the belief in Divinities, spirits and ancestors.

Spirits, in Akan, 'Abosom', and in many other West African societies, are closely linked to the physical world through natural objects like seas, trees, mountains, rivers etc (Opoku 1978:55, Opokuwaa 2005:20). Accordingly, these natural objects are regarded as manifestations of gods. Traditional priests or priestesses as in Ashanti tradition, known variously as 'Trɔnua' (Ewe), 'ɔkɔmfo' (among the Asantes), are persons knowledgeable in spiritual matters and who therefore have the ability to carry out rituals in respect of deities and divinities (Opoku 1978:74). Ancestors are regarded as good spirits and therefore they are revered in traditional religion. Libation making is a form of ancestral veneration carried out by believers in traditional religion at times, often suggested by a traditional priest or priestess.

Traditional religion imbues values such as honesty, kindness, compassion, hard-work, responsibility and politeness on its adherents in society. Kuada (1994) has shown that Ghanaian cultural values have influence on managerial behaviour within businesses in the country. There is no reason to suppose health and safety management within SMEs in the

same setting could be devoid of similar influences. Traditional values could therefore affect workers' attitudes to and perceptions of health and safety within SMEs. The forgoing observations in effect, help to put the management of health and safety within SMEs into proper perspective. Other traditional values are further discussed in the sections that follow.

## **2.5.2 SOCIETAL NORMS AND VALUE SYSTEMS**

### **Kinship and family**

The family is the ultimate social unit in the Ghanaian society as it is, with many other cultures. However, use of the word implies an extended family which extends to and includes in-laws, parents, grandparents, children, grandchildren, cousins, nephews, and their children. The family is the hub of social occasions such as funeral rites, adulthood rites and naming ceremony of a child involving a member of a family. It is also the focus of customary practices including marriage rites, land tenure, inheritance and religious rites. Each member of a family has a stake to ensure the success of such ceremonies which involves one or more members of the family. Members of a family assist one another especially in times of natural disasters, accidents, death, illness, inability to pay school fees et cetera. Each member has a stake in the property of another in as far as he or she could benefit in the above-mentioned ways.

The Ghanaian extended family culture imbues responsibilities on each member of a family. Members of an extended family have responsibility to support a person from birth to adulthood when he or she is capable of living an independent life. Even then, in times of a calamity he or she can still fall back on the extended family members for support. In return for the support given to him or her by extended family members, he or she must be loyal to the extended family and must meet financial and social obligations to foster a stronger bond between members of the extended family. In the Ghanaian context, the extended family culture is a significant factor in the management of SMEs partly because majority of them, if not all, are family run and employ family labour. There are some commonalities in aspects of the extended family culture and the management of construction SMEs. For instance,

ultimate power and authority lie with the head of the extended family and he or, in some tribes she, is accorded respect as it is with the owner/manager of SMEs.

Both Kuada (1994:17) and Buame (1996:149-151) agree that the extended family culture affects managerial decisions of business executives and entrepreneurial capacity of enterprising individuals in Ghana. According to Buame (1996), such vested family interest has often led to some Ghanaian entrepreneurs being deprived of their working capital leading to insolvency. Similarly, Woode (1997:61), in emphasising the problems associated with the extended family system noted that apart from imposing financial obligations, it undermines public interest. The system therefore imposes some moral obligations on members to ensure one another's welfare in society, which puts a social and economic strain on them.

### **Age, respect, and ascribed positions**

In a Ghanaian society, ancestors are guardians of the young and living and are much revered. In parallel with this is also respect for the rich. Nukunya (1992:56) notes that ancestors in the Ghanaian society are believed to look after the welfare and prosperity of the living. The fringes of what is right or abhorrent lie with the ancestors who are the final arbiters on matters of justice in society. In congruence with this belief, is respect for elderly persons. The family structure imbues respect on those higher in the hierarchy so that a son accords respect to all uncles irrespective of their ages. A reversal of this respect by virtue of education of one can prove tenuous and often can result in carrot and stick style of rule to exact obedience. One's level of education accords him or her respect from those working under him or her who have lower qualifications. Respect may also be accorded because of 'socially desirable lifestyle' such as being married or being a father or mother of many children.

### **Inheritance system**

Two main types of inheritance exist in Ghana; matrilineal inheritance and patrilineal inheritance. The Akans are the largest ethnic group practising a matrilineal form of inheritance in which wealth is shared by the owner's sisters and children. Ewes, Gas, and Mole-Dagomba practice a patrilineal system of inheritance; wealth being shared by owner's children and spouse. Osei-Kofi (1967) cited in Buame (1996) has noted that matrilineal inheritance in Ghana has been acknowledged to result in protracted conflicts and litigation.

## **2.6 THE CONSTRUCTION INDUSTRY OF GHANA**

The construction industry of Ghana contributes to the country's economy through the provision of infrastructure and employment of the labour force. The construction industry contributes 21.9 per cent of industrial output and 3.2 per cent of GDP (Baah-Nuakoh 2002). It also contributes about 2.2 per cent of employment of the country's labour force. In terms of the level of skill of persons employed by the sector, 67.2 percent are unskilled, 24.8 per cent are semi-skilled and 8 per cent are highly skilled (Ghana Investment Promotion Centre (GIPC) 2006:10).

The construction industry of Ghana can be considered to comprise two sectors, a formal sector and an informal sector. The formal sector is based on the institutional structure and regulatory systems put in place by the British rule prior to independence, to facilitate implementation of physical development agenda of the government at the time. For instance, the Public Works Department established under the British rule still exists today, although it has undergone restructuring many times in response to Government policies. The traditional mode of procurement inherited from the British system is the most popular form of procurement route for many projects in the country. A number of authors have questioned the relevance of inherited systems and practices of the construction industry of Ghana noting that the level of development of industrialisation and culture of Ghana is different from the UK from which such systems originate (Edmonds and Miles 1984:53-58, Wells 2001).

The informal sector comprises project participants similar to the formal sector but relationships between them are typically informal. This sector includes small builders and clients seeking to carry out construction of single dwelling houses for their families. These clients rely on family labour and self-employed artisans for their source of labour. Many construction SMEs operate in both informal and formal sectors.

The construction industry of Ghana, like other developing countries, relies on labour intensive methods. Typically, infrastructure like feeder roads, wells for water, small dams, small-scale irrigation, buildings are constructed using labour based methods (European Commission 1994:51). Labour is cheap, therefore making the adoption of labour-based

methods as a more economic option than equipment-intensive or capital-intensive methods. The burden of having to provide the capital cost of equipment and machinery is a heavy one considering the difficulties contractors face in accessing credits for such items thus compelling many contractors, particularly micro contractors, to specialize in labour-based construction methods.

The industry is polarised with very few large foreign construction businesses. Foreign firms generally undertake large infrastructure projects while domestic (or local) contractors would, normally, bid for smaller projects within the limits of their capacity. The majority of small and medium-sized contractors are domestic contractors managed as family-run businesses (Addo-Abedi 1999). Entry barriers to the construction business are very relaxed resulting in a huge number of contractors chasing fewer jobs. The main constraints facing construction SMEs include the following:

- delays in payments of contractors' certificates due to state bureaucracy and sometimes Government's inability to pay for public projects. Borrowing from banks is costly, and could result in many construction businesses becoming insolvent;
- for large projects, SMEs do not have the requisite capacity to undertake these projects unless such projects are packaged into a number of smaller contracts (subcontracts);
- lack of skilled manpower resulting in inefficient use of resources and higher cost of construction and poor quality of work; and,
- SMEs have difficulties accessing credits from commercial banks because of the preference for large-scale businesses with proven track records, a criterion which many SMEs may not meet.

### **2.6.1 INSTITUTIONAL ENVIRONMENT**

The activities of many government ministries and other organisations affect the construction industry of Ghana. Public institutions may interact directly with the industry by regulating its activities or act on behalf of government as financiers, suppliers, regulators, clients, or paymasters (Edmonds and Miles 1984:53-63). Non-governmental organisations, which significantly influence the activities of the industry, include trade unions, employers'

organisation, private clients, donor agencies, professional institutions, research institutions, and private educational institutions.

Two government ministries have direct responsibility for overseeing the activities of construction businesses and implementation of state policy in the construction sector. The Ministry of Roads and Transport (MRT) is responsible for the road sector of the economy and has under it, the Ghana Highways Authority (GHA), Department of Urban Roads (DUR) and Department of Feeder Roads (DFR). The Ministry of Water Resources, Works and Housing (MWRWandH) is responsible for policy implementation in respect of works, housing, water supply, sanitation and hydrology, and oversees the activities of building contractors. The MWRWandH comprises the Public Works Department (PWD), the Department of Rural Housing, Department of Hydrology, Rent Control Department, and agencies for implementing programmes deriving from government policies.

Physical developments, particularly roads and housing are normally undertaken after the relevant departments are satisfied that the project meets the requirements stipulated within the planning and building regulations of Ghana. Environmental concerns have to be addressed by the client and contractor. The activities of other government ministries, departments and agencies impact on the construction industry as regulators:

- Ministry of Manpower Development and Employment (MMDE) has two departments under it namely the Labour Department and Factory Inspectorate; labour issues and issues relating to employment is the responsibility of the former department while occupational health and safety issues is the responsibility of the latter.
- Ministry of Environment and Science (MES) has the Environmental Protection Agency and Town and Country Planning under it. The Environmental Protection Agency implements policies relating to the environment and ensures environmental regulations are complied with. Town and Country Planning has responsibility for ensuring projects comply with zoning laws and building regulations.
- Ministry of Health, through its Occupational Health Unit is responsible for occupational health issues.

- Ministry of Lands, Forestry and Mines has relatively many departments and agencies under it responsible for the use of land and resources. The Lands commission, Survey Department, Office of the Administrator of Stool Lands, Lands Valuation Board and Land Title Registry, and all these have roles that could influence the construction industry.

### **2.6.2 DEMAND FOR CONSTRUCTION PRODUCTS**

The Government plays a dominant role in the demand for construction products. About 4.5 per cent of GDP is allocated annually by the central Government for infrastructure development while demand for construction products by the private sector is estimated at 3 per cent of GDP (European Commission 1994:50-51). Property and real estate developers constitute a significant demand for construction products in the private sector. These carry out construction based on speculation of the prices for construction products and in some cases to meet specific demands by clients. Individual house-builders also play an important role in the demand for construction in the informal sector of the industry.

There is a huge housing deficit in Ghana. According to studies conducted by the Ghana Real Estates Developers Association (GREDA) and the Government of Ghana, annual housing requirements are estimated at between 110,000 and 140,000 units per annum (Ghana Investment Promotion Centre (GIPC) 2006:31). Problems associated with the real estate market include poor land administration, unclear land tenure systems, delays in land registration and approval of permits and few institutions willing to provide long-term mortgage financing. These factors have contributed to higher average of number of persons living per room in urban centres (Fiadzo et al. 2001).

### **2.6.3 SUPPLY OF CONSTRUCTION PRODUCTS**

The supply side of the construction market is organised around more ‘traditional’ relationships where the design of a facility is separated from its construction, both in time and in space. Clients will normally appoint a designer who is in independent practice for the design of the project. After design is completed, further assistance is sought in the

employment of a contractor; price and quality being the main criteria. Some private clients undertaking house building on a small scale, would normally arrange for the project to be constructed without following formal procedures of appointing consultants, formalising the employment of a contractor and seeking planning permission. These clients operate in the informal sector of the industry, typically of developing countries in sub-Saharan Africa (Wells 2001).

Private professional practices in the construction industry are small with rarely any single practice providing all the services of traditional practices in the building industry namely; architectural consultancy, engineering services and quantity surveying. The Ghana Highway Authority, Department of Feeder Roads and Department of Urban roads apart from their function as government implementing agencies, also act as government consultants.

Large contractors in the Ghanaian construction industry are subsidiaries of international construction groups such as Taylor Woodrow, Skanska and Sonitra. The domestic contractors belong to one of two associations; the Association of Road Contractors of Ghana and the Association Building and Civil Engineering Contractors of Ghana. Contractors are registered under the Ministry of Works and Housing Classification scheme or under the classification scheme of the Ministry of Roads Transport.

Different classification schemes exist for contractors; the Ministry of Roads and Transport classification scheme and the Ministry of Works and Housing classification. According to Addo-Abedi (1999) the MRT classifies contractors into the following classes:

- Class A—contractors are qualified to carry out road works, airports and related works;
- Class B—contractors are qualified to undertake bridge construction, the construction of culverts and other drainage structures;
- Class C—contractors are qualified to carry out labour based works;
- Class S—contractors are qualified to construct structures; and
- Class M—contractors are qualified for miscellaneous road related works.



These classes are further subdivided into categories 1–4 depending on the number and qualifications of the contractor's permanent staff, equipment/machinery holding, previous experience, and financial status. For instance a contractor can be designated as A<sub>1</sub>B<sub>1</sub> or A<sub>2</sub>B<sub>2</sub>. The MWH classifies building contractors as belonging to one of classes D<sub>1</sub> through to D<sub>4</sub> depending on financial standing of the contractor, equipment holding and qualification and number of permanent employees (Dansoh 2005).

## **2.7 SUMMARY**

Ghana's economy depends on export of primary agricultural products and foodstuff for home consumption. Whilst agricultural output is largely dependent on weather conditions, government policies have sought to provide infrastructure and subsidies to the agricultural sector. Ghana as a country is rich in mineral resources which also contribute significantly to foreign exchange earnings.

Politically, Ghana has witnessed many military juntas in reaction to poor economic conditions. In search of a solution to the country's problems, governments after independence have often adopted policies in favour of a controlled economy or a free market economy. Implementation of development plans have been a problem due to military takeovers. This situation has created a difficulty in assessing the effectiveness of development plans in Ghana. Despite the attempts at industrialisation through import substitution and creation of enabling environment, the rate of industrialisation remains low.

The private sector has been the focus of economic policies aimed at creating an environment for private sector-led growth. However, response of the sector to various initiatives aimed at increasing productivity of the sector is slow. SMEs in particular, are not competitive and many of them only operate within the domestic market. Ghanaian SMEs face constraints to their development mainly originating from the socio-cultural and economic situation of the country. These constraints posed by the contextual environment have serious implications for the management of health and safety and therefore form the framework for examining health and safety management within construction SMEs.

In view of the preceding literature discussions, two basic research questions may be raised:

- What are the key contextual influences on health and safety management practices within SMEs in Ghana?
- What implications do the contextual environment of Ghanaian construction SMEs have for improving occupational health and safety management within construction SMEs in Ghana

### **3.1 INTRODUCTION**

SMEs share general characteristics which distinguish them from large businesses. This chapter therefore reviews general literature on the characteristics of SMEs while acknowledging these are reflected in SMEs in the construction sector of developing countries. The first section of this chapter discusses literature pertaining to the definition of SMEs and reviews the general literature on the significance of SMEs. Based on the discussions, the study adopts a definition that takes into consideration the national context and specific nature of the construction industry of Ghana. The second section reviews literature on the general characteristics of SMEs and the implications they have for health and safety management within SMEs in the construction industry of developing countries. The third section presents review of literature pertaining to strategic management within SMEs. This is followed by a summary of the chapter.

### **3.2 CONCEPT OF SMES**

#### **3.2.1 DEFINITION OF SMES**

There has been no commonly accepted definition of SMEs (Curran 1999:6-7, Curran and Blackburn 2001:8, Harper 1984, Storey 1994, Walters 2001:4). Definitions vary from one country or industrial sector to another. Researchers and governments employ various definitions to suit their purposes. Definitions are generally based on quantitative and or qualitative criteria. Quantitative definitions adopt employee numbers, turnover, value of fixed assets, and balance sheet total whilst qualitative definitions adopt ownership, responsibility, flexibility, level of autonomy and market share. Curran (1999:7) cites the different size distribution of businesses of different sectors as the main reason for the variation in SME definition.

The Bolton Committee (Bolton 1971) concluded that a small firm had three broad qualitative characteristics as follows:

- a small firm tends to have a relatively small share of its relevant market implying that it has little or no influence on either price, quantity or its environment though it may be possible for a small firm to have a large share of a small, specialised, market niche;
- a small firm is managed in a personalised way by its owner and part-owners that is it has no formalised management structure with the extent of formalisation varying among firms; and,
- a small firm is independent of the control of a parent company, implying a certain degree of freedom to make decisions.

The committee also settled on a statistical definition of SMEs (refer to Table 3.1). The committee categorised construction firms with 25 employees as small but this has been considered an unsuitable definition considering the high level of subcontracting in the construction industry (Eyiah 2004).

Table 3.1 Statistical definition of SMEs by the Bolton committee

Industry	Statistical definition
Manufacturing	200 employees or less
Retailing	£50,000 p.a. turnover or less
Wholesale trades	£200,000 p.a. turnover or less
Mining/quarrying	25 employees or less
Motor trades	£50,000 p.a. turnover or less
Construction	25 employees or less
Miscellaneous services	£50,000 p.a. turnover or less
Road transport	5 vehicles or less

Source: Adapted from Goss (1991:30)

Wynarczyk, et al. (1993) provided three central qualitative criteria by which small firms differ from large ones as follows:

- Uncertainty- small firms being price- takers;
- Innovation by providing marginally differentiated or non-standardised varieties of products or services; and
- Evolution through experiencing greater range of changes than occurs in larger firms.

The European Commission adopts both quantitative and qualitative criteria in its definitions namely; number of employees, the size of the business in financial terms, and its independence (refer to Table 3.2). An independent business in this context means one that is less than 25 per cent owned by one enterprise (or jointly by several enterprises) if it is to fall within the definition of a small or medium-sized business.

Table 3.2 European Commission definition of SMEs

<b>Criteria</b>	<b>Micro</b>	<b>Small</b>	<b>Medium</b>
Employees	Maximum 10	Maximum 50	Maximum 250
Maximum turnover (in million EUR)	-	7	40
Maximum balance sheet total (in million EUR)	-	5	27
Independence	-	25%	25%

Source: (European Commission 1996:4)

The definition of SMEs in the Ghanaian context, like in the UK and many other countries, varies between researchers and government institutions of the country. The most commonly adopted criteria in SME definitions in Ghana are number of employees and value of fixed assets with differing thresholds of these criteria (refer to Table 3.3). Researchers generally overcome the problem of definition by coming up with their own arbitrary definition to suit their research problem. While this may help answer their research question(s), it could reduce the comparability of results and the validation of the findings of research adopting similar definitions. Curran and Blackburn (2001:21-22) suggest good practice guidelines for researchers seeking to define SMEs:

- a literature search should be conducted on how other researchers have defined SMEs in order to avoid obvious mistakes in approach and to increase comparability of results with past research relevant to the study at hand;
- definitions such as turnover, number of vehicles, number of hospital beds, while they may be used, care must be exercised in ensuring sampling frames are accurate and appropriate;
- it is recommended, where possible, to ground definitions in the culture of the sector (s) being investigated;
- definitions adopted may depend on available sampling frames;

- having decided on preliminary definition of SMEs, it is recommended to check resulting sample against known populations to assess whether the definition is producing a sample which is representative; and,
- where the research employs secondary data, it is recommended to check whether coding categories if any, are employed in the secondary data analyses can be converted to produce a suitable definition SME.

### 3.3 Summary of definitions of SMEs commonly adopted in Ghana

<b>Source of definition</b>	<b>SME definition</b>
Ghana Statistical Service (GSS)	Firms with less than 10 employees are considered small and those with more than 10 employees are medium or large
National Board for Small Scale Industries (NBSSI) (1996)	Micro enterprises are defined as enterprises employing 1-5 workers with fixed assets (excluding realty) of value not exceeding \$10,000 and Small Scale Enterprises as those that employ between 6-29 persons or have fixed assets (excluding realty) of value \$100,000
Bank of Ghana under the Funds for Small and Medium Enterprises Development (FUSMED) (Boch-Ocansey 1996)	Defined micro and small enterprises as businesses with assets of 5 million cedis and 25 million cedis in constant 1988 prices (US \$20,000 and US \$100,000 equivalent) respectively
Ayeetey et al. (1994)	Defined micro businesses as businesses employing 1-9 persons; small as those employing 10-29 persons; and medium as those which employ 30-40 persons
Mensah (2004)	Defined micro businesses as businesses employing up to 5 persons with fixed assets (excluding realty) not exceeding \$10,000 in value; Small businesses as those which employ 6-29 with fixed assets (excluding realty) up to \$100,000 in value; and Medium businesses as those, which employ 30-99 persons with, fixed assets of up to \$1 million in value.
Eyiah and Cook (2003), Eyiah (2004)	Defined construction SMEs as contractors registered in financial classes 2, 3, and 4

Construction businesses in developing countries have unique characteristics that should be taken into account when defining construction SMEs. Eyiah and Cook (2003) consider contractors in classes 2, 3, and 4 to have similar characteristics, being family businesses and operate as domestic contractors. This definition has disadvantages. Firstly, the definition limits comparability of research results on SMEs since many definitions employ number of employees. Secondly financial classifications are subject to review by government institutions that institute them. Thirdly, definitions of financial class employed by the

Ministry of Road Transport and Ministry of Works and Housing differ on the minimum amount for each financial category. Thus a contractor regarded as class 3 by the former ministry may belong to a different financial class under the latter ministry's classification scheme.

Domestic construction businesses operate within the domestic construction market and are managed as family businesses, rarely employing up to 200 employees (Addo-Abedi 1999). Thus, domestic construction contractors in Ghana may conveniently be regarded as SMEs based on the similar characteristics they possess. This study therefore defines SMEs as family run domestic contractors with the following thresholds relating to medium, small and micro construction businesses:

- an upper threshold of 199 employees and a lower threshold of 30 employees are adopted for medium-sized construction businesses;
- small businesses are ones which employ 10-29 persons; and
- micro businesses are construction businesses whose number of employees does not exceed 10.

### **3.2.2 SIGNIFICANCE OF SMES**

In terms of numbers, SMEs dominate all economic sectors of countries all over the world. For instance, in the year 2003 there were 19 million enterprises in existence in Europe providing jobs for 140 million people (European Commission 2003). By contrast, there were only 40,000 large businesses in existence which account for 0.2 per cent of all enterprises. Also, about 98 per cent of the 5.9 million businesses in the U.S. have fewer than 100 employees (U.S. Census Bureau 2004). In developing countries like Ghana, SMEs constitute 95 per cent of registered enterprises (Boch-Ocansey 1996).

Recent views on small and medium-sized businesses portray them as playing a vital role in the provision of income to persons engaged in their operation and contributing to the growth of nations socially and economically (Scase and Goffee 1980:ch1, Smallbone and Welter 2001, Stanworth and Gray 1991:12-13, Stokes 2002:ch1). Commenting on the role of SMEs

in the UK economy Curran (1999:1) maintains that UK policies on SMEs have centred on promoting enterprise and job creation. These policies, he argues, have mainly been guided by a free market view of past governments which suggest that such a view holds promise for the establishment and growth of more SMEs.

A possible attraction of SMEs lies in their potential for solving the problem of the management of labour that characterises large businesses (Scase and Goffee 1980:15). Labour relations in SMEs are known to be better than larger business because of close personal relationships between owner manager and employees. This, as Goss (1991:13) explains, results in low levels of unionisation and few industrial disputes which characterised micro and small businesses.

Industrialised societies face environmental and social problems which are blamed on large businesses whose activities, it is claimed, violate the natural order. In contrast, SMEs are believed to hold the key to better quality of life through the preservation of nature. As Goss (1991:21) succinctly puts it,

“.....small-scale enterprise, it is believed, .....possesses an essential quality which, in itself, is humane, non-violent and benign, captured in the slogan ‘small is beautiful’”.

Governments of both developed and developing countries adopt various measures to enhance their economic performance. For instance, in the UK, Stanworth (1991:19-20) and Curran (2000) agree that the most significant of these measures is direct support and value placed on enterprise and entrepreneurship. Government direct support for SMEs is necessary since SMEs’ ability to achieve their potential is limited by certain size-related disadvantages compared with larger firms (Bannock and Peacock 1989, BRT 2000).

In developing countries, the economic significance of SMEs makes them the focus of economic policies aimed at creating an enabling environment for stimulating growth of the private sector of the economy (Cook and Toyin 2000, Government of Ghana (GOG) 2005, Sohail et al. 1999). Forstater (2006) argues that SMEs in developing countries are more likely than their large counterparts to adopt labour intensive technologies and therefore capable of absorbing surplus labour. Research by Hillebrandt (1999) supports these arguments by



pointing out that the problem of high unemployment levels in developing countries can be solved by the construction industry in those countries through the adoption of labour intensive methods. This partly explains the focus on construction SMEs of poverty reduction strategies of governments of Sub-Saharan African countries (European Commission 1994).

### **3.2.3 CHARACTERISTICS OF SMES**

Qualitative definitions of SMEs are based on the characteristics SMEs possess which distinguish them from larger businesses. The following subsections present characteristics relating to the management culture of SMEs.

#### **Informal procedures**

Management procedures are largely informal, with micro businesses exhibiting the highest tendencies towards informal practices (Kotey and Slade 2005). Record keeping tends to be relatively poor. From the perspective of health and safety management, this informal style, limits SMEs adoption of health and safety management systems which require a more formal approach (Dawson et al. 1988, Eakin et al. 2000, Mayhew 1997, 2000, Vassie et al. 2000).

Owner/managers have preference for informal management procedures and autonomy. They exercise direct control over many organisational functions of the business and maintain close relationships with employees. The welfare of employees is therefore, more likely than in large businesses, to be promoted by owner/managers (Baldock et al. 2006, Goss 1991:12, Marlow 2003). On the contrary, as Rigby and Lawlor (2001) have noted, if the nature of the relationship is such as to exert pressure on owner/managers which will bring about more spending, then it is likely to have negative consequences on health and safety.

Typically, SMEs employ cheap and temporary labour, preferring to employ few permanent staff to perform supervisory duties. Formal employment agreements are rarely followed and, where the employees are ignorant of the rights to a decent workplace, this will lead to little attention being paid to working conditions (Mitullah and Wachira 2003).

### **Simple management structures**

Generally, most SMEs maintain a simple management structure with relatively few management layers (Messeghem 2003). Decision making is vested in the owner manager who performs most business functions including direct supervision of the performance of activities (Timmons 1999:26). This, according to Ghobadian and Gallear (1997) makes the owner/manager the focal person in the SME. Delegation of responsibilities to key employees may be done by him/her as and when she/he finds it necessary. Departments are rarely established in the smaller size SMEs to help carry out important organisational functions such as accounting, production and personnel.

The lines of communication are shorter, facilitating efficient and faster decision making. Fielden et al. (2000) have pointed out that the simple communication structure of SMEs promotes innovation, team spirit and an easier focus on clear goals. The simple organisational structure couple with the direct control of owner/manager results in less bureaucracy within most SMEs.

### **Environment of SMEs**

SMES are influenced by both internal and external environments. The external environment, according to Stokes (2002:52-53), comprises influences of government policies, regulation, technology, socio-cultural, prevailing economic conditions, market sector, competitors and customers while internal influences relate to characteristics of the owner/manager and resources (Figure 3.1). In comparison with large businesses, SMEs have relatively little control over their external environment (Curran and Blackburn 2001:7). It is the interaction of the SME with the external environment that determines its failure or success. Compared to large businesses, SMEs operate in a turbulent environment with many entries into the sector and many business failures (Stokes 2002:52).

The operation of SMEs in a turbulent environment means they need to develop strategies to adapt to changes in both the internal and external environments. Research on construction SMEs suggests that the ability of an SME to adapt to external influences is partly dependent

upon its size, with smaller size categories more adaptable to their environments than larger ones (Nooteboom 1994, Sexton and Barrett 2003a).

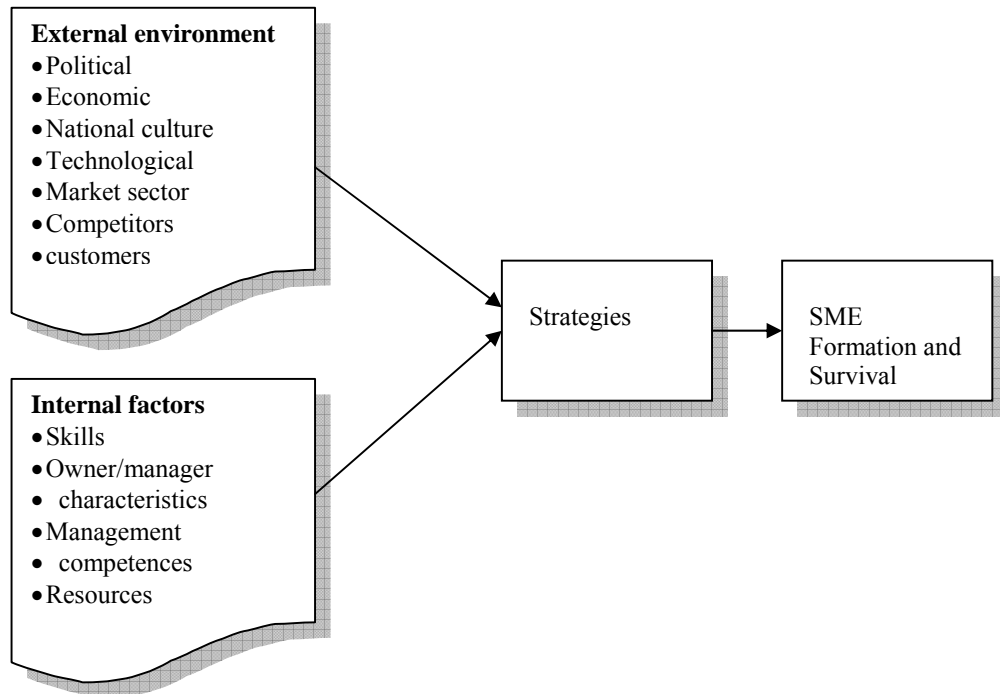


Figure 3.1 Influences on SME formation and survival

Adapted from Stokes (2002:52)

Pressure on SMEs as result of adverse environment has, partly, been attributed to the failure of SMEs to manage the health and safety function effectively (Peyton (1996) cited in Lingard and Holmes (2001)). Extending this argument to developing countries, means SMEs in developing countries are more likely than their counterparts in developed countries to succumb to environmental influences as absence of good governance, lack of infrastructure, low per capita income are common features of these countries.

### **Reluctance to seek external advice**

Research suggests that SMEs are reluctant to take-up external support services Lightfoot (1998). Goss (1991) have cited lack of understanding of owner managers' behaviour by support providers as a factor contributing to SMEs' failure to take advantage of support services. Research study carried out by Curran et al. (1993) show that even in times of crisis,

owner/managers were often less likely to seek help to solve the critical problem situation because of fear of compromising their independence and autonomy. Other authors have argued that owner managers are sceptical of the approach of support providers (Gibb 2000, Jarvis et al. 1996, Lightfoot 1998). The grounds for scepticism lie in the fact that the approaches adopted by support providers such as business planning, financial management and training originates from standard text on business management and large business practice. Small businesses are not large businesses scaled down and, as such, these approaches would not be best suited to them.

Dugdill et al. (2000), arguing on similar grounds, contend that SMEs will take up health and safety support if it is offered in an appropriate way, at an affordable cost and is relevant to the immediate needs of businesses concerned. The need to meet their legal obligations regarding health and safety, coupled with the benefits derived from high health and safety performance are motivating factors to the uptake of health and safety support. Curran (2000) suggests owner managers' reluctance to take-up external support programmes is due to administrative convenience. Government departments favour standard approaches that are easy to cost, administer and monitor and this has led to a top-down and standardised approach.

### **Methods of production**

Methods of production within SMEs are generally labour intensive. This, therefore, makes industrial sectors, which require labour rather than high capital investments, conducive for SMEs (Scase and Goffee 1980:20). Thus, in industries such as petrochemical and automobile requiring huge initial investment in machinery and equipment, SMEs are unlikely to flourish.

The construction industry is one in which skills are much more required than other capital, consequently self-employed persons dominate the sector. In countries where labour is relatively cheap, labour intensive methods can be a more economical alternative to capital intensive methods. Such environments are more appealing for entry by potential owner/managers. In this regard, cheap labour and scarce capital in most developing countries including Ghana, favours the establishment and operation of SMEs. By this argument, it is not surprising that all domestic construction businesses in Ghana are SMEs.

### 3.3 STRATEGIC MANAGEMENT IN SMES

Most literature on strategic management is on businesses without regard to their size. Many authors of the literature have emphasised strategic management in the face of globalisation, changing technology, integrated economies, changing workforce and the need to develop (Chinowsky 2001b, Chinowsky and Meredith 2000, Dansoh 2005, Edum-Fotwe 1995, Junnonen 1998, Smallbone et al. 1997).

The strategic management process in construction companies as found in the strategic management literature (Price and Newson 2003, Venegas and Alarcon 1997, Warszawski 1996) can be summarise as follows:

- surveying the external and internal environments of the company and carrying analysis of SWOT;
- developing a strategy by determining and evaluating alternative strategic options and choice of future courses of actions; and
- selecting the preferred strategy and implementing it.

Venegas and Alarcón (1997) provide a structured path and techniques of analysis. The advantage of a structured procedure is to force a logical thinking through the process of strategic management, which may be well suited to businesses with formal and structured approaches to organisational functions. This is a questionable approach for SMEs whose preference is for a informal management style. Mintzberg (1979:306) notes that little of the behaviour of small firms is formalised and that they make minimal use of planning. Therefore, the informal style of management by small firms may seem incongruent with the rather formal methods of strategy formulation, analysis, and implementation.

Rather than remain passive to adverse environmental pressures and constraints, owner managers may respond by developing strategies to overcome these constraints. It would be wrong to assume that SMEs, as a result of their preference for informal management style do nothing about strategic management; at least they may perform strategic management in way that suits their culture. One key paradox elaborated upon by Price and Newson (2003) is related to the question of what strategy an organisation should adopt. The approach may be logical and structured (Ansoff 1979, Porter 1998:xiv) or creative and intuitive (De Wit and

Meyer 1999:60, Ohmae 1982:4). Mintzberg (1994) makes the distinction between strategic planning as an analytical, formal and concerned with programming and strategic thinking as creative, intuitive and characterised by synthesis and suggests the latter to be the key to successful strategy. Hofer and Schendel (1978:11), Burstein (1999) and Spillan and Ziemnowicz (2003) seem to carry the voice further by stating that all firms have a strategy.

Chan and Forster (1999) note that strategy in the world of small business may be much less formal in its nature and that owner-managers may have implicit rather than explicit strategies. Empirical research by Woods and Joyce (2003) demonstrate that, as small firms gain knowledge of strategic tools, their practices will evolve to better management strategies. They also noted that there are cultural changes in management, necessitated by growth. This change engenders a move from informal management to formal strategic management.

Ownership has an influence on strategic management practices of SMEs. O'Regan and Ghobbadian's (2002) study highlights the differences in strategic practices of small subsidiaries and SMEs. The findings of the study indicate that small subsidiaries of larger organisations face fewer barriers to implementation of strategic planning than independently owned SMEs. Their findings also indicate that small subsidiaries place greater emphasis on formal planning than SMEs.

The literature on strategic planning in SMEs indicates a tendency for adoption of informal strategic planning in SMEs compared with larger businesses. While there is no specific literature investigating the inclusion of health and safety in strategic plans in SMEs, it is worth noting that planning health and safety in small businesses tends to be informal, in line with the way SMEs carry out strategic management.

### **3.4 SUMMARY**

The chapter brings to light literature on the nature of SMEs and how some of their characteristics impact negatively on health and safety management. That notwithstanding, their importance cannot be understated. Lack of uniformity of the definition of SMEs presents problems which a researcher must carefully consider. The characteristics of SMEs

and the position of the owner/manager as a key person have implications for research first, in terms of access for data collection and second, methods of data collection. The characteristics of SMEs in relation to their environments and the implications this has for health and safety management within the sector, particularly in developing countries, is further discussed in chapter four.

#### **4.1 INTRODUCTION**

This chapter reviews literature pertaining to health and safety management. The first section presents the health and safety management system of Ghana; the institutional structure for implementation of health and safety standards at workplaces including construction sites and the legal framework. This is followed by a section that reviews literature pertaining to health and safety management practices of construction businesses. Current approaches to health and safety management in the construction industry are also discussed.

The third section reviews literature on the role culture plays in health and safety management. The significance of national culture as a key environment influence on health and safety management within SMEs is highlighted. Based on this importance, it is argued that the national culture of developing countries like Ghana should form the framing work for examining health and safety management within construction SMEs. The section is followed by one that presents literature discussions on the problems preventing SMEs from effectively managing aspects of their operations in a safe and healthy manner. Literature on health and safety management within construction businesses in developing countries is presented, highlighting how it relates to the management of construction SMEs. A summary of the chapter is presented last, together with key questions which the study should seek to address.

#### **4.2 OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT IN GHANA**

##### **4.2.1 BACKGROUND TO NATIONAL OCCUPATIONAL HEALTH AND SAFETY**

Occupational health and safety legislation is a means by which the work environment can be controlled to ensure the safety, health and welfare of employees and persons likely to be adversely affected by the work environment are protected. In Ghana, occupational health and safety legislation has been inherited from a British legal and institutional framework at the time when Ghana was a British dependency. The health and safety of workers in the mining and wood processing industries of Ghana prior to independence, was protected by the



Factories Ordinance 1952. This remained the main occupational health and safety legislation in force until its repeal by the Factories, Offices, and Shops Act 1970. Regulations made under the Factories Ordinance 1952 which remained enforce include:

- the Factories (Woodworking) Regulations, 1959;
- The Food Factories (Welfare) Regulations, 1959; and
- The Factories (Docks Safety) Regulations, 1960.

Ghana's occupational health and safety legislation is influenced by the International Labour Organisation (ILO). Principal ILO conventions relating to occupational health and safety which have been ratified by Ghana include:

- Underground Work (Women) Convention 1935 (No. 45);
- Radiation Protection Convention 1960 (No. 115);
- Guarding of Machinery Convention 1963 (No. 119);
- Hygiene (Commerce and Offices) Convention 1964;
- Working Environment (Air Pollution, Noise and Vibration) Convention, 1977; and,
- Labour Inspection Convention 1947.

Existing occupational health and safety legislation in Ghana is fragmented and limited in coverage. Some key economic sectors are not covered by the country's occupational health and safety laws. A notable example is the agricultural sector, although it employs over 60 per cent of the country's workforce there is no any form of occupational health and safety laws regulating the activities of the sector. This unfortunate situation can be traced back to colonial rule in Gold Coast (Ghana), where the colonial government placed more emphasis on labour relations in sectors of economy where formal employment relations existed. The mining and manufacturing sectors of the economy are examples of such economic sectors. Commenting on the shortcomings of occupational health and safety legislation of Ghana, Tetteh (2003), noted that health and safety statutes evolve without due regard to existing ones, resulting in fragmentation, overlapping areas of jurisdiction and inconsistencies in occupational health and safety laws of the country.

Ghana lacks a policy defining the responsibilities of stakeholders namely; government, employers and employees. Without engaging stakeholders in the management of occupational health and safety, workers' rights to a decent work environment will be denied in the informal sector of the economy which employs temporary labour. Contractors in Ghana rely on a temporary workforce, invariably, such workers are illiterate, do not belong to any form of labour unions and are not covered by insurance schemes.

#### **4.2.2 INSTITUTIONAL ARRANGEMENTS FOR THE MANAGEMENT OF HEALTH AND SAFETY**

Government institutions responsible for ensuring that occupational health and safety standards are maintained at workplaces fall under five ministries; the Ministry of Manpower Development and Employment (MMDE), Ministry of Environment and Science (MES), Ministry of Health (MOH), Ministry of Roads Transport (MRT) and Ministry of Lands, Forestry and Mines (MLFM) (refer to Figure 4.1). The ministries are responsible for policy formulation and, departments under them implement the policies. Other bodies, which actively influence occupational health, safety, and welfare, include employers' associations, trade unions, clients, financiers, and end users.

The Factory Inspectorate Department has sole responsibility for occupational health and safety. Other public departments and agencies with some health and safety responsibilities include the Labour Department, the Environmental Protection Agency, Occupational Health Services Unit, and the Attorney General's Department. Efforts at establishing other institutions, namely the National Commission on Occupational Safety and Health (NACOSH) and the Ghana Society of Occupational Health (GSOH) have not been successful (Haizel 2000).

Close collaboration, networking, and coordination in respect of the health and safety functions of these institutions have been poor, resulting in health and safety being accorded a low profile within occupations in the country. There are no consultations with employers' organisations, trade unions, and health and safety stakeholders on policy issues affecting occupational health and safety at national level. This may continue for some time unless the

stake these bodies have in health and safety is stimulated. Public institutions responsible for health and safety have failed in their duties as enforcers and promoters of workplace health and safety because of lack of resources and logistical problems (Tetteh 2003). The total number of “factory” inspectors in the whole country stands at 34 (refer to Table 4.1).

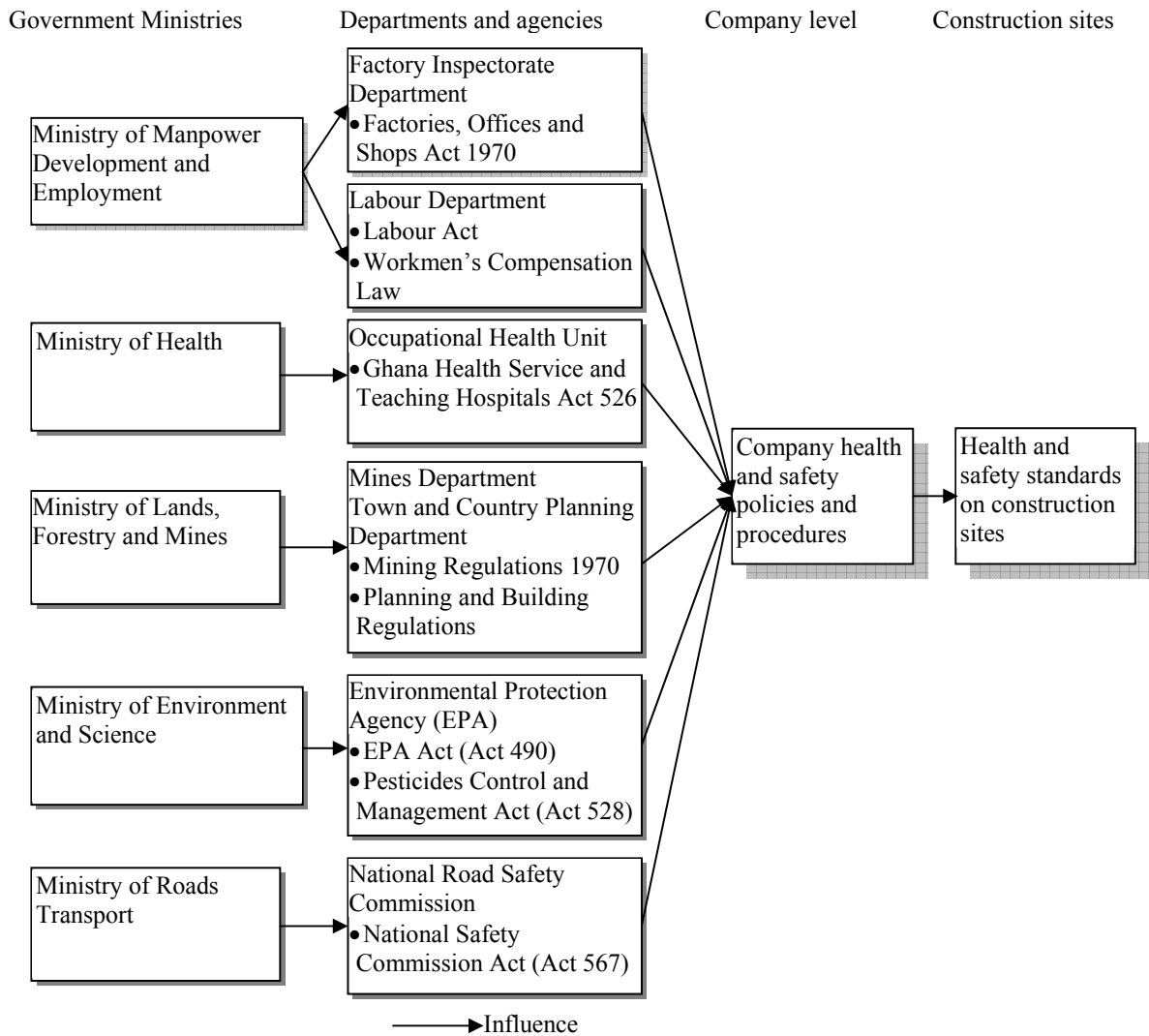


Figure 4.1 Administration of occupational health and safety in Ghana

Source: Extracted from author’s field notes, organisational structures, annual reports and laws establishing the departments

The Occupational Health Service Unit of the Ministry of Health has the responsibility for providing curative care, first aid, worker education on health issues, health surveillance of

workplaces and conducting risk assessments. Ghana's health ministry is proactively engaged in ensuring work environments are descent for workers. Unfortunately, the Occupational

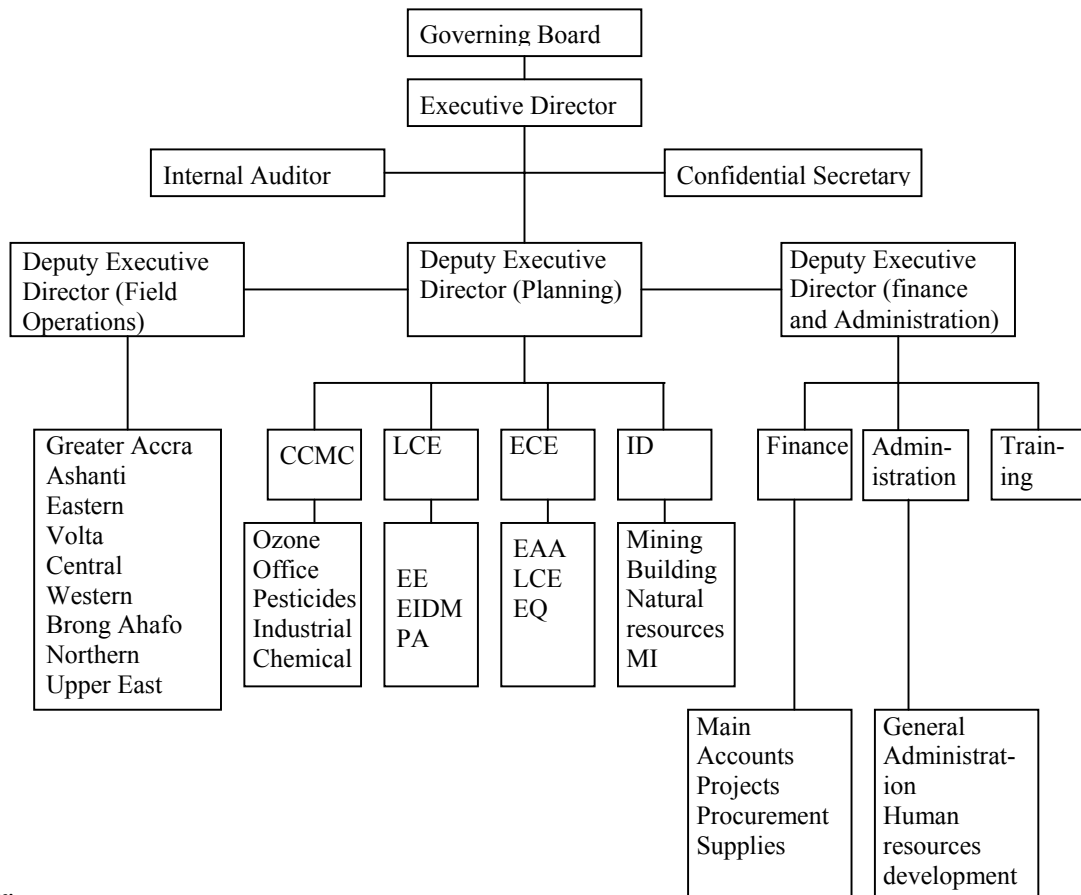
Table 4.1 Manpower strength of Factory Inspectorate Department

Region	Administrative Staff		Technical Staff			Total	Grand Total
	Junior staff	Senior staff	Total	Junior staff	Factory Inspectors		
Greater Accra	2	4	6	3	11	14	20
Ashanti	2	1	3	3	7	10	13
Central and Western	1	3	4	2	6	8	12
Volta and Eastern	2	1	3	1	6	7	10
Brong Ahafo	2	0	2	3	2	5	7
Northern	1	1	2	1	2	3	5
Total	10	10	20	13	34	47	67

Source: Author's field notes (2006)

Health Unit faces constraints similar to the Factory Inspectorate Department. Clarke (2005) estimates the proportion of Ghanaian workers receiving comprehensive occupational health services to be in the region of 1-2 percent, with the number of staff of the Occupational Health Unit in 2003 comprising four physicians and one qualified occupational health nurse. The Labour Department is responsible for labour administration in Ghana. Accordingly, issues affecting labour, including workers' health and safety, fall within its jurisdiction. The department implements labour standards in conformity with the country's labour laws and International Labour Conventions ratified by Ghana. Two national labour laws are implemented by the Department; the Workmen's Compensation Law and the Labour Act. Hodges (2006) has noted that forty-six ILO conventions have been ratified by Ghana. Where an employer persistently abuses rights of workers with regards to their health and safety, he or she will be liable on summary conviction to a fine or imprisonment or to both. According to the 2004 Annual Labour Report (2004), the department has 10 regional offices, 36 district labour offices and 62 employment centres countrywide.

The environmental protection agency is under the Ministry of Environment, Science and Technology. The agency was established by the Environmental Protection Agency Decree, 1974, charged with the responsibility of implementing the environmental laws of the country. Environmental issues relating to the built environment are handled by a section of the agency (Figure 4.2).



Key:

CCMC–Chemical Control and Management  
 ECE–Environment Compliance Enforcement  
 MI–Manufacturing Industries  
 LCE–Legal Compliance Enforcement  
 HRM–Human Resource Development  
 EIDM–Environment Information and Data Management

IEC–Information Education Commission  
 EE–Environment Education  
 EAA–Environment Audit and Assessment  
 EQ–Environmental Quality  
 ID–Intersectoral Division

Figure 4.2 Organogram of the EPA

#### **4.2.3 HEALTH AND SAFETY LEGISLATION RELEVANT TO THE CONSTRUCTION INDUSTRY**

There are no health and safety regulations developed specifically for the construction industry. Considering the high risk nature of the sector, this limitation seriously handicaps the implementation of health and safety standards on construction sites. The Workmen's Compensation Law, the relevant sections of the Labour Act 2003 and Factories, Offices, are discussed in the sections that follow.

##### **The Factories, Offices and Shops Act**

The Factories, Offices, and Shops Act 1970 caters for factories, offices, shops, ports, and construction. The Act provides for the minister for manpower, development and labour to make regulations in respect of construction works to address specific hazards including imposing duties on persons in respect of the hazards. Section 57 of the act relates to building and civil engineering works. Other sections relevant to building and civil engineering works specified in section 57 (1) of the Act include: sections 6 to 8, 10 to 12, 19, 20, 25 to 31, 33 to 40, 43 to 54, and 60 to 87. Under the Act, construction businesses are required to register their sites (sections 6-8) and to report workplace accidents and dangerous occurrences to the Factory Inspectorate Department. It also requires them to provide wholesome drinking water on their sites (20), toilet facilities on the sites (19), and personal protective equipment for their workers (25), and to take preventive measures to control or prevent specific hazards on sites. The hazards named are; noise, vibrations, manual handling (26 and 27), and fire (31).

The Act also requires medical supervision of the health of employees where necessary. Businesses are required to take measures at the workplace in respect of access and egress to the factory (site), the construction and design of structures to ensure the safety of workers, and users of facilities (33-35). Fencing and safeguards are required to be provided or constructed and maintained for the safety of persons at the factory (site) (38-40). Records of lifting machines and appliances are required to be kept and they must be of sound construction, properly maintained and precautionary measures taken during their operation (37 and 43-47). Construction businesses are required to take precautionary measures to prevent injury and explosions because of dust, gas, vapour, present in the work environment

(48 and 49). Steam boilers, receivers and containers, and air receivers are required to be of sound construction, properly maintained and precautionary measures taken to ensure their operation (50).

The Act provides for training of machine operators and persons employed in processes likely to cause injury (36). The Minister may make regulations to protect the health, safety, and welfare of workers (30 and 51). Other sections of the Act which relate to construction works include:

- Sections 52-54 set out the authority of inspectors in ensuring health, safety and welfare of persons at workplaces and the role the courts play in such matters;
- Sections 60-73 set out the offences under the Act and legal proceedings;
- Sections 74-77 relate to the administration of the Act; and
- Sections 78-87 relate to general matters.

There are a number of concerns regarding the implementation of the Act. First, regulations are needed to set standards for specific situations of the act. In the absence of these standards, employers wishing to comply with the requirements of the law will adopt standards which are very subjective. There is no law defining funding mechanisms for implementing occupational health and safety. Lastly, establishing compliance and enforcement networks is not covered by the Factories, Offices, and Shops Act which is the main occupational health and safety law of the country.

### **The Labour Act**

Part XV of the Labour Act, 2003 (Act 651) concerns the health and safety and environment of workplaces. Under this Act, it is every employer's duty to ensure employees work under satisfactory, healthy and safe conditions. Other sections of the Labour Act which impact on health and safety include: protection of employment relationship; general conditions of employment; protection of remuneration; unions; employers' organisations and collective bargaining agreements; National Tripartite Committee; and, labour inspection.

## **The Workmen's Compensation Law**

The Workmen's Compensation Act 1987 imposes employer liability to pay compensation to employees incapacitated by accidents arising out of and in the course of their employment. Compensation payment to accident victims is independent of negligence on the part of employer or fellow-worker. The employer is also required to bear the hospital expenses of the injured worker. In cases where the injured worker only requires treatment, he/she is entitled to his/her earnings while undergoing treatment for injuries he/she sustained through an accident arising out of, and in the course of his/her employment. There are exceptions to employers' liability to pay compensation. These exceptions are: where the injury is due to the workman having been under the influence of intoxicating liquor or drugs at the time of the accident or where the injury was deliberately self-inflicted or where the workman knowingly misrepresented to the employer that he was not suffering or had not previously suffered from that or similar injury. The law applies to persons employed by both public and private organisations. The Act sets out modalities for calculation of the earnings of workers and payments of compensations to workers who sustain injuries.

### **4.3 HEALTH AND SAFETY MANAGEMENT IN CONSTRUCTION**

The activities of the construction industry have raised serious health and safety concerns amongst governments, health and safety stakeholders, health and safety professionals and researchers over the past few decades (Enshassi and Mayer 2002, Gibb 2005, International Labour Organisation (ILO) 2005, Kaplinski 2002, Leopold and Leonard 1987, Rowlinson 2004). In response, health and safety legislation has been developed to ensure management of construction businesses, and recently many other participants in a project, assume responsibility for managing the risks associated with construction projects. Health and safety management in the construction industry has evolved from measures adopted in accident prevention to more systematic and proactive approaches to minimising the risk of hazards in the industry.

Past research has shown certain practices can lead to improved health and safety performance and therefore constitute good health and safety practices. These findings are summarised in



Table 4.2. Some health and safety practices are required by health and safety legislation to be implemented on construction sites in some countries. For instance worker involvement in health and safety, training in health and safety, and health and safety committees, are covered by health and safety regulations in the UK.

Table 4.2 Successful health and safety management practices

Year and author(s)	Summary of research	Health and safety management practices
Simonds and Shafai-sahrai (1977)	Identified factors that distinguished firms with lower injury frequency rates from those with higher rates	The distinguishing factors include the following: <ul style="list-style-type: none"> <li>• top management involvement;</li> <li>• higher average age of workers;</li> <li>• longer average length of employment;</li> <li>• adequate working space and neat environment; and,</li> <li>• higher percentage of married workers.</li> </ul>
Liska et al., (1993)	Identified zero accident techniques	Identified the following to be associated with safety success: <ul style="list-style-type: none"> <li>• safety training and orientations;</li> <li>• provision of safety incentives;</li> <li>• safety pre-task planning included in safety goals;</li> <li>• safety person or personnel;</li> <li>• safety policies and procedures;</li> <li>• fire protection programme;</li> <li>• accountability/responsibility and safety budget;</li> <li>• alcohol- and substance-abuse programme in place;</li> <li>• accident and near-miss investigation; and,</li> <li>• record keeping and follow-ups.</li> </ul>
Jaselkis et al., (1996)	Strategies for achieving excellence in construction safety performance	Companies with lower recordable incidence rates were characterised by the following: <ul style="list-style-type: none"> <li>• more detailed safety programmes;</li> <li>• expended large percentage of revenue on safety programmes;</li> <li>• greater safety training time;</li> <li>• more formal safety inspections per month; and,</li> <li>• more safety meetings.</li> </ul>
Gallagher (1997)	Identified factors associated with improved health and safety performance	The study identified the following factors to the associated with better health and safety performance: <ul style="list-style-type: none"> <li>• high level of top management commitment;</li> <li>• health and safety responsibilities known;</li> <li>• supervisor involvement encouraged;</li> <li>• active involvement of health and safety representatives who have a broad role;</li> <li>• effective health and safety committees;</li> <li>• planned identification of risk and hazard elimination/control emphasis; and,</li> <li>• comprehensive approach in inspections and investigations.</li> </ul>

Table 4.2 Continued

Tam and Fung (1998)	Investigated effectiveness of management strategies on safety performance	<p>The study concluded the following management strategies were effective in reducing accidents:</p> <ul style="list-style-type: none"> <li>• post-accident investigation;</li> <li>• safety awards;</li> <li>• safety training; and,</li> <li>• use of more directly employed labour</li> </ul>
Wright (1998)	Identified factors motivating proactive health and safety management	<p>Factors that create positive pressure to proactively manage health and safety were identified as follows:</p> <ul style="list-style-type: none"> <li>• fear of prosecution by maintaining image of responsibility thereby avoiding adverse regulatory, customer or public reaction;</li> <li>• belief that it is necessary and morally right to comply with health and safety regulations;</li> <li>• compliance with customer or regulator certification schemes;</li> <li>• minimisation of cost of ill-health and injury;</li> <li>• conformity with principles of total quality management, empowerment etc. ; and,</li> <li>• desire to improve staff morale and productivity.</li> </ul> <p>Factors that reduce the motivation resulting from factors that create positive pressure to proactively manage health and safety were identified as follows:</p> <ul style="list-style-type: none"> <li>• cost of health and safety improvements;</li> <li>• ease of implementation;</li> <li>• existence of corporate entity and personal accountability of decision makers;</li> <li>• background of employees and managers; and,</li> <li>• sector specific obstacles eg short term contracting.</li> </ul>
Gad (2002)	Literature review of safety culture	<p>The findings of the study demonstrated the following factors influence safety:</p> <ul style="list-style-type: none"> <li>• safety culture affects the attitudes and beliefs of workers in terms of health and safety performance;</li> <li>• management is the key influence of organisation's safety culture; and,</li> <li>• financial incentives to improve productivity or to compensate for working in hazardous conditions can lead to safety being compromised.</li> </ul>
Hinze (2003)	Identified factors influencing safety performance of specialty contractors	<p>Factors found in the study to positively affect safety performance include the following:</p> <ul style="list-style-type: none"> <li>• minimising worker turnover;</li> <li>• implementing employee drug testing;</li> <li>• training with assistance of contractor association; and,</li> <li>• growth in company size.</li> </ul> <p>Safety incentives were not necessarily associated with better safety performance.</p>

Table 4.2 Continued

Baldock et al (2005)	Identified main influences on the adoption of improvement measures by small businesses	Factors identified as being particularly associated with a propensity to make health and safety related improvements were found to be following: <ul style="list-style-type: none"> <li>• regulatory enforcement activity;</li> <li>• use of external assistance with respect to health and safety issues;</li> <li>• management training and experience; and,</li> <li>• membership of trade/business association.</li> </ul>
Aksorn and Hadikusumo (2008)	Investigated the effectiveness of safety programmes in the construction industry	Safety performance was found to be influenced by the nature of the implemented programmes. Particular elements of safety programmes found to be positively associated with safety performance included: <ul style="list-style-type: none"> <li>• accident investigations;</li> <li>• jobsite inspections;</li> <li>• job hazard analysis;</li> <li>• safety inductions;</li> <li>• safety record keeping;</li> <li>• safety committees;</li> <li>• safety incentives; and,</li> <li>• control of subcontractors.</li> </ul>

#### 4.3.1 HEALTH AND SAFETY MANAGEMENT SYSTEMS

A number of construction businesses manage the health and safety function in their businesses by carrying out health and safety activities aimed at minimising or eliminating the risk of hazards on their sites. A growing number of construction businesses, particularly larger ones, have tended to adopt health and safety management systems which have their origin in Deming’s Plan-Do-Check-Act model of continuous quality improvement (Hamid et al. 2004). Essentially, a health and safety management system has four primary elements:

- planning;
- implementing the plan;
- reviewing the plan; and,
- evaluating and taking measures to improve strategy.

Despite the popularity of literature on health and safety management systems, a commonly accepted definition is lacking due to the variable nature of the elements often composing them. Robson et al. (2007) found that health and safety management lack a common definition and reported on health and safety management systems having up to 27 elements.

Helledi (1999) reported on the adoption of a simple, non-bureaucratic health and safety management system by SMEs in the Finnish construction industry which proved effective in bringing down the numbers of site accidents experienced by contractors. The elements of the health and safety management system comprised: a planning phase involving the assessment of risk; an implementation phase involving communication of critical tasks to be carried out on site; a control phase involving monitoring the activities; and, a follow up phase which provides feedback and enables corrective measures to be taken.

Approaches to health and safety management reported in construction hardly qualify as health and safety management systems because they lack one or more of the elements of Deming's Plan-Do-Check-Act (PDCA) cycle. For instance, Agrilla's (1999) 3Es suggested for achieving high safety performance comprises; safety engineering, safety education and safety rule enforcement. This health and safety management system involves planning as part of the safety engineering process but lacks clear elements or procedures on how to continuously improve health and safety performance.

The effectiveness of health and safety management systems in the construction industry has not been assessed. At best, it is only the individual elements that make up the system which have been shown to be associated with improved health and safety performance. The adoption of comprehensive health and safety management systems has been shown to be a difficult task for SMEs (Dawson et al. 1988, Eakin et al. 2000, Mayhew 2000). Some reasons as to why SMEs might find it difficult adopting such systems include lack of adequate resources, the fact that they operate in a competitive environment and operate under relatively informal management procedures (Banfield et al. 1996, Mayhew 1997, Vassie et al. 2000). There is, therefore, reason to doubt the applicability of comprehensive health and safety management systems to construction SMEs.

#### **4.3.2 HEALTH AND SAFETY INTEGRATED MANAGEMENT SYSTEMS**

Research suggests integrating the health and safety management function of a business with other management functions could enhance the overall performance of the business (Kamp

and Bansch 1998, Koehn and Datta 2003, Taylor et al. 2004:544). Besides the benefits to be derived from such an integrated management systems, Gibb and Ayoade (1996) have pointed out client pressure, cost reduction, legislation and total project management as factors promoting their adoption.

Many management systems, especially health and safety, environment and quality have many identical elements. For instance, policy, training of personnel, auditing, responsibility for task and controls are common elements in all three areas of management. This, therefore, makes it possible to integrate them as a single management system. Proponents of integrated systems argue that such an integrated system will lead to management effectiveness, reduced duplication, elimination of conflicting responsibilities and harmony of objectives (Douglas and Glen 2000, Scipioni et al. 2001).

Dias (2000) examined the possible integration of the elements of families of standards, ISO 9000, ISO 14000 and a similar standard in health and safety in construction. Many elements of the three standards were found to be candidates for possible integration. Hamid et al. (2004) investigated the integration of safety, health, environment and quality in the construction industry. Their findings indicate that safety, health, environment and quality have many common grounds which make integration possible. Based on the similarities in many areas of these management functions, the authors proposed a model of integrated management system for the construction industry. Similarly, Kirbert and Coble (1995) explored the integration of health and safety regulations with environmental regulations in the construction industry. Arguing that environmental issues are safety issues, the authors suggest a single administrative procedure for safety and environment via an environmental safety plan. The benefits of such a procedure include fewer processes involved in regulatory agency reviews and workers benefiting from training in both environmental and safety aspects of their work environment.

#### **4.3.3 BEHAVIOURAL APPROACHES TO HEALTH AND SAFETY MANAGEMENT**

Seventy to ninety per cent of accidents are caused by unsafe behaviour. A number of theories have linked accidents to the failure of persons (by their actions or omissions) in the accident

chain to avert accidents (Adams 1976, Bird 1974, Haslam et al. 2003, Suraji et al. 2001). These explanations have therefore formed the basis of psychological approaches to health and safety management which have as their aim, the modification of behaviour so as to break the chain of events leading to most accidents.

Duff et al. (1994) reported on behavioural modification procedures used in improving construction site safety. The authors of the study used a combination of goal-setting and feedback to influence the behaviour of site operatives. The findings of the study suggest goal-setting and feedback can greatly enhance health and safety performance. Duff (1998) has pointed out that behavioural methods should not be restricted to site operatives but could be extended to include site management staff and senior corporate management. Lingard and Rowlinson (1994) examined the effectiveness of the goal-setting and feedback approach in the Honk Kong construction industry. It was found that labour commitments to the group and to the organisation are intervening variables in the application of behavioural techniques.

Workers need to behave on site in a manner that will not expose them or their colleagues to hazard, particularly workers need to:

- report incidences to their employers;
- take care of their own health and safety;
- abstain from alcohol and drugs that would otherwise increase their exposure to hazards;
- take care to avoid adversely affecting the health and safety of fellow workers and persons likely to be adversely affected by their actions and omissions;
- follow health and safety rules on site; and,
- use PPE when provided.

#### **4.3.4 INTEGRATION OF HEALTH AND SAFETY WITH PROJECT MANAGEMENT**

Studies in construction accidents suggest many accidents on construction sites could be prevented by taking appropriate steps in all phases of the project life. Thus, participants in a project have a role to play in improving the health and safety performance of construction

sites and completed projects. Current thought on health and safety in construction put emphasis on integrating health and safety management into the entire construction process. This view of health and safety management is, at least to some extent, largely driven by developments in health and safety legislation in Europe and USA.

This view of integration of health and safety management into construction processes requires responsibility for health and safety to be equitably shared between the key participants in a construction project. This view therefore requires project participants to “think health and safety” throughout the phases of a project. As Hinze (1998) has emphasized, addressing the safety of construction workers in the design phase involves recognising the potential impact designers’ decisions can have on the health and safety of construction site workers. Similarly, owners’ involvement in construction safety could reduce cost of safety to minimum.

In the UK and other countries which are members of the European Union, the European Directive on Temporary and Mobile Construction Sites calls for health and safety to be considered during the early stages of a project. However, maximum benefits can be derived from considering health and safety at the early stages of project if procurement routes are adopted which facilitate coordination and team spirit (Kheni and Gibb 2006).

Integration of health and safety into project planning has been promoted by authors such as Kartam (1997), Cameron and Duff (2002), Murray (2002), Saurin et al. (2004), Pavitt et al. (2004), Gibb and Pendlebury (2005) and Hare et al. (2006). The work of these authors have each sought to explore avenues for managing health and safety as integral aspect of projecting planning during one or more of the phases of project execution. For instance, one the most recent studies, Hare et al. (2006) investigated the integration of health and safety with the pre-construction phase of projects. The authors highlighted the importance of effective teams and effective two-way flow of information for successful integration.

In developing countries, this shift in focus of health and safety management from actual site processes to overall management of projects requires, first of all, commitment on the part of

governments. This will create an enabling environment for the participation of clients, designers and health and safety stakeholders in health and safety management (Coble and Haupt 1999).

#### **4.4 THE ROLE OF CULTURE IN HEALTH AND SAFETY MANAGEMENT**

##### **4.4.1 ROLE OF CULTURE IN THE STUDY OF ORGANISATIONS**

Organisations are situated within an ambient society or culture. While individual organisations have their culture, their activities are affected by the broader socio-cultural environment. The works of psychologists have helped to pave the way to understanding national culture, organisational culture and sub cultures of organisations. Schein (1985), and Deal and Kennedy (1982) are among authors that provide insights on the culture of organisations while the outstanding work of Hofstede (1980) focuses on the influence of national culture on organisations. All these authors agree that culture provides a means for gaining insightful knowledge of the activities of organisations.

The construction industry differs culturally from one country to another and therefore practices and procedures which are well suited to the culture of one country may not be suitable in other countries. As Ofori (1999) has emphasised, universal solutions are not practical.

##### **4.4.2 CULTURE AND HEALTH AND SAFETY MANAGEMENT**

Health and safety management in the construction industry is influenced by cultures including; organisational culture, industry culture, existing legislation and institutions with responsibility for occupational health and safety. Research solely devoted to such influences is scarce. Lingard and Rowlinson (2005:ch3) have shown the significance of these influences on proactive health and safety management in the construction industry.

National culture is a key factor in the environment of SMEs as highlighted in section 3.2.3. The political and socio-cultural influences are factors which determine the success or failure of most SMEs. Thus, creating an enabling environment is the key to improving poor health



and safety performance in SMEs particularly in developing countries where an enabling infrastructure is nonexistent. The influence of national culture on health and safety management in the construction industry has been emphasised among authors such as Coble and Haupt (1999), Peckitt et al. (2002) and Smallwood (2002).

Peckitt et al. (2002, 2004) studied the construction industries of Britain and the Caribbean. Construction workers of the latter country, which has a culture similar to and originating from West Africa, were found to view values of freedom, love and social interactions as having impact on site safety, whereas British workers rated these values as having a lower impact. Other religions have been similarly linked to health and safety. The study therefore highlights the importance of national culture in the management of health and safety.

Smallwood's (2002) study of the link between religion and health and safety in South African construction firms show that religion puts emphasis on the need for conservation of life and the environment. Religion is a facet that characterises the national culture of countries, with Christianity, Islam and Buddhism being the dominant religions in most countries. Native religious practices are also to be found in most countries which have been influenced by foreign religions.

Coble and Haupt (1999) have emphasised that cultural influences on health and safety management in developing countries are stronger than in developed countries and advocate for integrating cultural aspects that are advantageous, with health and health management in developing countries.

The link between culture and health and safety can also be inferred from research on attitudes and behaviours by social psychologists. For instance, Ajzen and Fishbein's (1980, 2005) in the theory of reasoned action, suggest that behaviours are linked to attitudes which are shaped by one's beliefs. Thus, workers' behaviours on construction sites may, by this argument, be informed by attitudes which are inherently linked to their cultural dispositions.

#### **4.5 THE PROBLEM OF HEALTH AND SAFETY MANAGEMENT IN SMES**

Anecdotal evidence suggests the implementation of health and safety standards in SMEs is problematic because of their particular characteristics. A survey conducted by Baldock et al., (2005) revealed marked variations in firms' health and safety practices. External factors found in the study which influenced the businesses' decisions to improve health and safety included; regulatory enforcement activity, use of external assistance on health and safety and membership of trade associations. Internally, the size of SME (number of employees and turnover), growth performance and management experience were found to correlate with propensity to adopt health and safety improvement measures. A study by Champoux and Brun (2002) also suggests small business characteristics are associated with health and management within SMEs. Areas of operation have also been found to relate to adoption of health and safety management practices; even where businesses operate in the same industry, there can be marked variation in their health and safety practices depending on the nature of their product or service they render. Birchall and Finlayson (1996) found that, in the construction sector, the effectiveness of health and safety management systems varies with organisational size and type of business activity.

The huge numbers of SMEs in the economy of any country makes it difficult for enforcing agencies to reach them. Additionally, most SMEs are "invisible", making it difficult for safety inspectors to locate them. Locating construction SMEs is even the more difficult because of the particular characteristics of the industry. For instance, the need for permanent office accommodation become increasingly apparent as the construction business expands its operations and takes bigger contracts. Some owner/managers of SMEs may therefore choose to operate from their homes. Also, construction sites are dispersed and temporary.

Government regulation of the sector can contribute to difficulties in the management of health and safety. SMEs, generally speaking, are saddled with regulatory burden when compared with large businesses because of their size. Evidence exists which indicates the cost of compliance with regulation in SMEs is disproportional and greater in SMEs than in larger businesses (Bannock and Peacock 1989, BRT 2000). Thus, complying with health and safety regulations can be seen as costly and a burden by owner/managers.

In developed countries there is ample evidence that health and safety performance of SMEs is poorer than larger businesses (Cully et al. 1999, MORI 1998, Nichols 1997:154, 161-168, Nichols et al. 1995, Stevens 1999, Walters 2001:81-86). In the face of scarce resources, SMEs are unlikely to commit sufficient amounts and the right type of resources in the management of health and safety. This is the more true of SMEs in developing countries where access to finance is a major problem.

To manage health and safety effectively, it is essential that owner/managers have the right attitude and perceptions about hazards on construction sites. Unfortunately, this is not the case in SMEs where health and safety risks are often wrongly perceived to be low (Champoux and Brun 2002). Most owner/managers misconceive the risk levels of their businesses and rarely involve their workers in decision-making relating to health and safety matters. The Health and Safety Commission in the UK (Department of Environment Transport and the Regions (DETR) 2000) for instance, has identified ignorance amongst other factors preventing SMEs from taking the opportunity to improve their competitive position through better health and safety management.

SMEs have a preference for informal procedures over formal procedures and may therefore find it difficult adopting formal management procedures developed for large businesses. Health and safety management systems and practices successfully applied in large firms will therefore be unsuitable for SMEs unless they are modified to take into account, the informal culture of SMEs.

#### **4.5.1 ARE DEVELOPING COUNTRIES ANY BETTER?**

Health and safety management is a challenge to governments as well as owners of businesses. The business environment is one which may be described as harsh and unpredictable such that any attempt at implementing management interventions without taking it into account is bound to fail. Regulatory systems and institutions in many developing countries have been inherited from developed countries. Furthermore, in many of these countries, such regulations have not been updated to reflect their current level of development and cultural milieu.

Health and safety regulations are incomprehensive and limited in coverage (Suazo and Jaselskis 1993). LaDou (2003) reports that occupational health and safety laws cover 10% of working population in developing countries, omitting many high risk sectors such as agriculture, fishing, forestry and construction. Koehn et al. (1995) have cited bureaucracy, time pressures, ineffective institutional structures for implementing occupational health and safety laws and ignorance on the part of workers about their rights to a decent workplace, as factors militating against the implementation of effective health and safety management practices in developing countries. Mwombeki (2005) in a similar study found that majority of Tanzanian contractors, small or large, appear to understand the importance of health and health and safety programmes but did not implement such programmes to improve the poor health and safety performance of the construction industry.

Research carried out by Gibb and Bust (2006) on health and safety in developing countries has identified a number of factors having a negative impact on health and safety management in developing countries:

- poor infrastructure;
- problems of communication due to low literacy level;
- unregulated practices on construction sites;
- adherence to traditional methods of working;
- non availability of equipment;
- extreme weather conditions;
- improper use of equipment; and,
- corruption.

The culture of the construction industry in developing countries does not promote health and safety. Certain practices of the industry are a disincentive to the effective management of health and safety. Ngowi and Mselle (1999) observe that contractors in developing countries gain little competitive advantage from good health and safety management. The practices of competitive tendering and award of most public contracts to the lowest bidder in many developing countries compels contractors to drive their prices low, while cutting costs, which, in turn, affects health and safety.

Many workers in developing countries are barely literate. Koehn et al. (2000) have stressed that a key barrier to health and safety management is the difficulty in training illiterate workers. High poverty levels compel workers to accept work in unacceptable high risk situations without complaining or demanding their employers put in place health and safety measures. Mitullah and Wachira (2003) have observed that workers, particularly in the informal construction sector in a developing country such as Kenya, are accorded little health and safety protection. These workers, according to the authors, do not belong to any form of union making it difficult for them to compel their employers to adhere to good labour standards. The abundance of cheap labour in developing countries means employers can dismiss site workers who perform unsatisfactorily and also replace them with new workers easily. This has been argued by Koehn and Reddy (1999) to cause site workers to often take risks on the job, leading to serious accidents on site.

The production process in developing countries is labour intensive, a characteristic which favours the establishment and growth of SMEs in many sectors in developing countries. It is arguable whether owner/managers have the experience and skill in labour intensive technologies. Most owner/managers start businesses in pursuit of autonomy and as a secondary reason, to provide income for their families. Very few of owner/managers are well versed in the management of business operations. This, therefore, brings into doubt their ability to manage the risks of hazards associated with labour intensive methods.

#### **4.6 SUMMARY**

Health and safety management literature suggests a move towards stricter health and safety legislation and more proactive approaches to managing health and safety risks. Literature on health and health tends to focus on legislation and on workplace arrangements for effectively dealing with health and safety risks. Only recently did the theories on health and safety in construction begin to have a broader scope extending beyond the construction process to include the pre-construction phase. However, this view excludes the external environment within which business activities take place. A holistic view that engenders the socio-cultural, economic and political environments within which business activities take place is lacking in the health and safety literature.

SMEs, by their very characteristics, present unique problems in health and safety management and therefore unique solutions need to be devised. There is a paucity of literature on both SMEs and health and safety management in developing countries. Existing literature focuses on health and safety management and SMEs in developed countries. These may only suffice as a contextual comparison of what is happening in developed countries and what pertains to developing countries. In light of the above this chapter has argued for understanding the interaction between the environment and SME health and safety decision making. This will form a first step to developing strategies for improving health and safety management in the sector. The next chapter presents a detailed discussion of the research methods adopted in seeking to answer research questions relating to the literature review in this chapter.

The literature discussions in the chapter bring to the fore two key issues; difficulties in adoption of health and safety practices by SMEs and the roles the external environments of SMEs and their organisational characteristics play in health and safety management. Two pertinent research questions with regards to these key issues are:

- What main health and safety management measures are adopted by Ghanaian construction SMEs to control the risks of hazards on construction sites in Ghana?
- What are the key organisational influences, if any, on the health and safety management practices of Ghanaian construction SMEs?

On the question of the external environments of SMEs, two questions have been raised regarding the issue in chapter two (Section 2.7). The following four propositions, derived from the second question and literature discussions relating to it, summarise the relationships between SME characteristics and health and safety practices:

Proposition (P) 1: construction SMEs with few employees are less likely to adopt health and safety practices. Those with a large number of employees are likely to be health and safety conscious and adopt measures to control health and safety risks.

Proposition (P) 2: construction SMEs with small turnovers are less likely than their counterparts with large turnovers to adopt health and safety measures to control health and safety risks on sites.

Proposition (P) 3: civil engineering SMEs are more likely to adopt health and safety practices practices compared to building contractors.

Proposition (P) 4: long established SMEs are more likely to adopt health and safety measures than newer companies.

## **5.1 INTRODUCTION**

This chapter discusses how the work was carried out in order to meet the study's aims and objectives. The first section of the chapter considers the philosophical assumptions and research strategy adopted for the study. The section presents discussions of literature on paradigms that inform the study's underlying philosophical assumptions and the different research strategies available which could be used as means of solving specific research problems. Discussions on the relative merits of the different research strategies are also presented in light of the particular characteristics of SMEs. The section argues for the adoption of methods well suited to construction SMEs which also take into account the nature of the phenomenon under investigation, wherefore a multimethodology strategy was adopted.

The section is followed by one that presents the research design adopted for the study. Problems of access to SMEs are highlighted and the steps adopted by the study to secure access to SMEs and cooperation of their owner/managers are explained. A combination of data collection methods employed in the study are subsequently explained followed by the research process adopted for the research study.

## **5.2 RESEARCH STRATEGY**

### **5.2.1 ASSUMPTIONS UNDERLYING CHOICE OF RESEARCH METHODS**

The choice of research methods in management and social sciences embodies the researcher's assumptions about the nature of the social world, the nature of the knowledge to be obtained and methods of gaining knowledge (Creswell and Clark 2007:5, 21&23, Mingers 1997:1, Saunders et al. 2007). These assumptions or paradigms are important, since a researcher's chosen research methods should be most appropriate for a context matching its underlying assumptions. According to Hesse-Biber and Leavy (2006:xii), paradigms provide a conceptual framework through which to view the world. Two main paradigms; positivism and interpretivist are traditionally and respectively, associated with quantitative and



qualitative research methods. Positivism considers the social world as if it were a concrete, objective reality, in a way that laws can be found that explain this reality. According to this view, this real world can be studied only through the utilisation of methods that prevent human contamination of its apprehension or comprehension. Interpretivist paradigm views the social world as one that individuals create, modify and interpret the environment within which they function. In essence, understanding this interaction of individuals and the environment can produce knowledge of phenomena under investigation. Direct knowledge of the social world according to the interpretivist/subjectivist view is impossible. Other paradigms, for example; postpositivism, constructivism and critical theory (Lincoln and Guba 2000:164) can also be found in the literature on research methods particularly, social science.

The richness of real-world situations means one paradigm is unlikely to present a complete picture of it or, to put it another way, different paradigms give different aspects of the real-world. Mingers (1997:9-11) likens the adoption of particular paradigms as viewing the world through “a particular instrument such as a telescope, an X-ray machine or an electron microscope”. Just as each of these can only reveal certain features while blinded to others, so does the different paradigmatic positions of the world. The different paradigms provide different perspectives of the real-world, sometimes too complex, or incommensurable (Guba 1990, Mingers and Brocklesby 1996). Indeed, Mingers (1997:14) arrives at a conclusion that it is wrong to wholly accept the postulates of one paradigm. These arguments therefore support multiple views of social reality, that is, multi-paradigm research and the possibility of adoption of more than one method in research.

Curran and Blackburn (2001:8) has pointed out that research relating to SMEs is multi- or cross-disciplinary, drawing on many disciplines including: anthropology; economics; psychology; sociology; geography; politics; and, history. This has led Perren and Ram (2004) to argue that assumptions underlying methods used in research on SMEs are similarly, likely to be drawn upon assumptions common to these disciplines. While this cannot be denied, the approach to health and safety by construction SMEs cannot be understood without developing an understanding of construction SMEs and their relationships with the cultural and socio-economic environments. It is undeniable that the environment, particularly

regulations (for this research; health and safety laws), institutions (health and safety administration) and national culture exert some influence on the operations of SMEs. Such information is needed to shed light on how health and safety is managed in a given context. However, these aspects are amenable to the objectivist view of the social world since they do undeniably exist and affect the operations of SMEs. At the micro level, the actions in respect of health and safety of owner/managers, project participants, health and safety stakeholders and others which have the capability to influence health and safety performance within SMEs can best be understood from a subjectivist/interpretivist view point of the world. Considering the nature of the range of issues relevant to health and safety management within SMEs, both interpretivist/subjectivist and positivist/objectivist assumptions are therefore relevant to the present research. Based on these forgoing reasons this research's underlying assumptions hinge on a multiple paradigmatic viewpoint of the social world. This position is based primarily upon the subject of study (construction SMEs), the phenomenon of interest (health and safety) and the information needed to shed light on the management of health and safety within the study's setting as already highlighted. The unit of analysis is defined as the individual SME organisation, but with acknowledgement to the project as the arena within which interactions occur (Kheni et al. 2005).

### **5.2.2 OVERVIEW OF RESEARCH STRATEGIES**

A research strategy is important to define the course of the research from start to finish. Research strategy connects researcher to specific approaches and methods for collecting and analysing data (Denzin and Lincoln 2000a:371). Research strategies may be categorised as qualitative, quantitative or multi-methodology. The following sections give an overview of qualitative methods, quantitative methods, combined qualitative and quantitative methods and multi-methodology.

#### **Quantitative research methods**

Quantitative research is based on the principles of the natural sciences and therefore relies on the assumptions of an objectivist view of the social world. Objective methods of measurements are therefore used in the measurement of constructs in quantitative research.

Applying these assumptions to human beings means proponents of quantitative methods maintain a view in which research subjects are seen as responding to external stimuli in their environment with their behaviour as the consequences of these stimuli. In this regard, human behaviour, by this viewpoint, is determinate and predictable.

Often, the object of quantitative research is to verify a theory rather than develop one by employing the principles of deductive reasoning. Thus, the method is important in developing generalizations that contribute to theory. In Creswell's (1994:87-88) view quantitative research generally involves the collection and analysis of data using statistical procedures and analysis with an aim to determine the truth or otherwise of hypotheses or theory. The research hypotheses and or questions may often be grounded in a theoretical framework based on past studies on the topic. Tangible data such as counts, weight, mass, and other physical measures are typically associated with quantitative methods. Quantitative research is generally based on two research methods namely survey research and experimentation. Survey research involves either interviewing or administering questionnaires to samples of research respondents selected by means of sampling procedures from a defined population in which the phenomenon of interests occurs. In experimentation, observations of the phenomenon of interest occur under deliberately controlled conditions produced by the researcher.

The health and safety of construction sites in Ghana is mainly the responsibility of contractors and designers, with the former solely responsible for accidents that occur on sites. The literature on health and safety management suggests the adoption of health and safety management practices relates to organisational characteristics such as business size, management style, and the external environment within which businesses are situated. A quantitative method, such as a survey research, can be suitable for a description of health and safety management practices and studying the associations between independent variables and the dependent variable; health and safety management. The adoption of survey research methods for the present study will allow answers to be sought on what health and safety management practices are adopted by Ghanaian construction SMEs and to test hypotheses relating to organisational characteristics and health and safety management. However, many aspects of health and safety management within SMEs will remain unexplained if

quantitative methods were employed alone. For instance, owner/managers' perceptions of health and safety as well as health and safety decision-making cannot be fully explained.

Generally, quantitative methods employ standardized methods which allow for a high level of objectivity, reliability, validity and ease of replication of studies that employ the method. The method provides descriptive information about the phenomenon that is being studied. Curran and Blackburn (2001:102) have pointed out the usefulness of quantitative methods in providing knowledge on how SMEs function in relation to the wider economy.

While the usefulness of explanations of processes cannot be overstated, numerical data relating to processes are useful in filling gaps in our understanding especially when powerful forms of explanations are not available (Curran and Blackburn 2001:102). For instance, reasons for poor adoption of health and health management practices may be known in some settings, but numerical information on the number of SMEs adopting particular kinds of health and safety practices is invaluable.

Quantitative methods have a number of disadvantages. They are based on principles of the natural sciences which have as their subject matter, physical entities which differ fundamentally from the subject matter of social science research. Some problems therefore arise in applying the method to human beings which is the subject matter of social science research.

Quantitative methods have limitations in providing causal explanations. It can only offer statistical associations between variables. It may yield a relation such as variable X is associated with Y or the occurrence of X predicts the likelihood of Y occurring, but cannot explain why such associations occur. Also, the assumptions of the method about the nature of variables measured do not hold true in the real world. Sayer (1992) refers to assumption about what is being measured, for instance owner manager attitude, job satisfaction, and business failure as 'qualitatively invariant'. These phenomena are influenced by other variables in a variety of ways with the passage of time and therefore, treating them as

invariant is therefore unsuitable. Also, the effect of extraneous variables on the relationship between two variables cannot be satisfactorily explained using quantitative approaches.

The weakness of quantitative methods in causal explanations limits it as a tool for developing theory. Kerlinger (1979:64), cited in Creswell (1994:82) has defined theory as “a set of interrelated constructions (variables), definitions and propositions that presents a systematic view of phenomenon by specifying relations among variables, with the purpose of explaining natural phenomena”. The method cannot therefore be relied upon to provide an understanding of the relations among variables which is necessary in theory building. It is, as mentioned earlier, useful in testing theory or verifying it.

Quantitative research methods assume members of a given category or group possess the same characteristics. With reference to SMEs, this assumption is untrue since the ranges of businesses that will make up SMEs possess certain distinct characteristics. For instance, O’Regan and Ghobadian (2004) have noted that SMEs are a heterogeneous group. This, then, reduces the usefulness of quantitative methods in SME research.

Measures of variables are necessary in quantitative research, this may present some degree of difficulty as some variables may be difficult to operationalize and measure. Thus questions about validity and reliability arise as errors may occur in research instruments developed to measure concepts that are difficult to operationalize.

### **Qualitative research methods**

Qualitative research adopts a subjective view of knowledge of the real world. The subject matter, in contrast with the natural sciences, is considered a conscious one, capable of creating awareness of the environment in which it is situated and restructuring it. The nature of the subject of research is therefore taken into account in explaining its behaviour. In qualitative research therefore, subjects’ perceptions of the world around them, the meanings, understandings and opinions about the world are of significance and can be the subject of investigation. Miller (1997:3) provides a summary of qualitative research as:

“It involves the close study of everyday life in diverse social contexts. Two major objectives of qualitative research are to describe and analyse both the processes through which social realities are constructed, and the social relationships through which people are connected to one another. It is within, and through, these relationships and processes that organisations, institutions, culture and society emerge and are sustained.”

Qualitative research can be used as a method in its own right or as a precursor to quantitative methods in less explored areas. It can be used to provide descriptive information and to generate theory (Graziano and Raulin 2007:129). The approaches to qualitative research include:

- Grounded theory which uses the principles of inductive approach to develop theory from data collected using qualitative data gathering techniques such as unstructured interviews, participant observations.
- Case study which allows indepth-investigation of social phenomena using a combination of data collection techniques. The case study approach is useful for allowing a particular issue to be studied in depth and in the context of its relationship with the real world (Feagin et al. 1991:56, Robson 1993:97, Yin 1994:7).
- Phenomenology, according to Moustakas (1994:26) may be described in Hegelian terms, as “knowledge as it appears to consciousness, the science of describing what one perceives, senses, and knows in one’s immediate awareness and experience. The focus of phenomenological research methods is on generating meanings and gaining insights into phenomena through concentrated studies of human experience and the essences of human experience”.
- Ethnography research method is common to the fields of sociology and anthropology and employs a repertoire of methods of data collection including; participant observation, interviews, conversations, photography, life histories, documentary analysis and films.
- Hermeneutics concerns the meaning we give to texts and related product of cultures, especially relating to past civilisations. The underpinning world view is interpretivism.
- Historical research methods adopt a process of learning the past through the collection and analysis of relevant information such as; autobiographies, diaries, letters, records, reminiscences, artefacts, and buildings. The method has as a basis an interpretivist worldview.

The preceding qualitative research approaches, in practice, adopt one of two research methods or styles; field research (fieldwork or naturalistic inquiry) and nonreactive research. Field research involves observing and studying people and events firsthand in natural social settings whereas nonreactive methods employ unobtrusive observational techniques, or study artefacts, archival records, official statistics and other by-products of past social life (Brewer and Hunter 2006:1&2).

Qualitative methods assume that human beings are sentient and constitute the subject matter of social science research, their activities can therefore, only be understood by studying the meanings and logics through which they shape events in their life. A more realistic feel of the world is thus possible than with the quantitative method. Knowledge of why things are as they are in the social world necessitates examining causal linkages that explain social activities and societies which is possible with qualitative methods. This explains the use of the method in generating explanations and theory building.

An important advantage of qualitative methods is that it allows the investigator to interact with the research subjects in their language and on their own terms (Kirk and Miller 1986:9). The activities of the owner/manager can be studied; the way management decisions are made and how employees and persons are managed are amenable to qualitative methods. Curran and Blackburn (2001:121) has emphasised this advantage as a great strength of the method in handling micro level research issues.

Qualitative research methods have a number of weaknesses. The assumptions underlying qualitative research deny a world out there to be investigated; instead, it is the meanings, interpretations and logic that social actors attach to the world that qualitative researchers are concerned with. The existence of social, cultural, economic and political institutions, for example: legislations; banking systems; and market structures, have real existence outside the human mind. This in effect, undermines the basic assumption underlying qualitative methods. All these institutional structures exist and affect the lives of individuals in society whether they are aware of the existence of any or not. These aspects are relevant to the understanding of SMEs and social life generally (Curran and Blackburn 2001:121). Essentially, these

institutions constitute the external environment of SMEs which determines their survival or failure. It may therefore be argued that both quantitative and qualitative research strategies are relevant for investigating the activities of SMEs vis-à-vis the external environment.

Qualitative research is normally done on a limited scale, it may for instance, focus on a small number of individuals in a particular locality. It is argued by some authors that the inability to conduct qualitative research on larger scales limits the generalizability of findings to other settings (Bryman 2004:284-285, Curran and Blackburn 2001:122). The method is labour intensive and overly dependant on the skills of individual researcher.

There is lack of standard methods and procedures for conducting qualitative research and this makes the method a difficult one in practice. The research employing the technique needs to demonstrate creative and innovative approaches to research strategy. It is therefore difficult to replicate qualitative research.

### **Reflexivity in qualitative research**

Reflexivity places emphasis on the need for critical reflections on how knowledge is constructed on the part of the researcher. This calls for discovering ones biases, paying regard to ethical issues and confronting alternatives in the planning, conducting and writing up of research. It stresses knowledge production as a reflexive process ensuring, quality research (Guillemin and Gillam 2004, Maton 2003, Mingers 1997:307). Curran (2001:159) admits that small business researchers need to be reflexive in relation to the research methods and research strategies they adopt while staying committed to reporting facts as they are.

In qualitative research, reflexivity needs to be engrained in the choices of paradigm, the research strategies, research design, the analysis and interpretations of field data. Each of these facets of the research process requires a conscientious effort to examine ways of enhancing the achievement of the final outcome of quality research. In practice, accomplishing reflexivity can be difficult since frameworks developed to guide research practitioners are rare, partly because, one cannot teach a person to think but rather one can only provoke a person's thinking.



In considering the overall methodology to be adopted for the study, the suitability of methods to the particular research context and data collection methods which facilitated entry to the site and cost considerations guided the researcher's decisions. Decisions made on how to overcome practical difficulties of accessing owner/managers and other research participants culminated into reflections on possible ways of engaging the research participants. While meetings were very useful in this case, the researcher's personal experience and familiarity with the research setting played a significant role. Writing field notes enforced a disciplined thought on the part of the researcher, requiring making sense out of field observations and allowing the data generated from the observations objectively speak with the same voice.

### **Combining quantitative and qualitative research methods**

Combining quantitative and qualitative approaches to data collection, the analysis of data and other phases of the research process has been suggested in recent methodological literature (Bryman 2007, Creswell and Clark 2007:5, Morgan 2006, Tashakkori and Teddlie 1998). This has been labelled as mixed methods. The assumptions underlying qualitative and quantitative methods represent bipolar extremes, whereas the former tends to emphasize an inductive–subjective–contextual approach, the latter tends to emphasize a deductive–objective–generalizing approach (Morgan 2007). However, in practice research problems rarely tie in neatly with the philosophical assumptions of these two methods. Instead, as research methodologists in favour of mixed methods argue, research problems can be understood better by employing both methods rather than using only one of the methods (Curran and Blackburn 2001:120-124).

Research adopting elements of both quantitative and qualitative strategies is common. Such research benefits from the advantages associated with each of the strategies, while at the same time, avoiding the weaknesses of each (Mingers 1997:9, Morgan 2006). Curran and Blackburn (2001:127-128) observe that, in practice, much research on SMEs adopts a 'mix-and-match' approach of qualitative and quantitative strategies and that, this is useful and produces worthwhile results.

Creswell and Clark (2007) point that mixed methods provide a more comprehensive approach to examining a research problem than either one of quantitative or qualitative methods. Mixed methods provides opportunities for combining wide range of methods of data collection suited to the research question rather than being restricted to methods of data collection associated with qualitative methods or quantitative methods alone.

The assumptions underlying mixed methods are based on a blend of both quantitative and qualitative assumptions to provide a view of the nature of the social world and the nature of knowledge. Thus, research employing the method stands to benefit from a world view of social reality that encompasses assumptions underlying both quantitative and qualitative research.

Some research questions cannot be satisfactorily answered using qualitative or quantitative methods alone as each method presents only a narrow focus of solutions to the research questions. For such questions, appropriate mixed method design could provide satisfactory answers.

Mixed methods provides the researcher with a freedom to use all methods that are suitable to a research problem, both quantitative and qualitative techniques may be used as well as inductive and deductive thinking. The method therefore encourages the researcher to be flexible and practical in the use of procedures for conducting an inquiry, techniques of data collection and methods of analysis.

The major limitation of mixed methods lies in difficulties in genuinely integrating the quantitative and qualitative aspects of research which employs a mixed methods approach. Greene et al. (1989), cited in Bryman (2007), found that 44% of 57 articles employing mixed methods which they examined did not integrate the qualitative and quantitative data. Research carried out by Bryman (2007) provide amplifications of the lack of integration of qualitative and quantitative research findings deriving from the use of mixed methods. Barriers identified which account for this includes:

- quantitative findings and qualitative findings may target different audiences, author's preference for one method over the other may lead to emphasis on findings relating to the preferred method;
- quantitative and qualitative components of research often have different timelines for analysis and writing therefore making integration difficult;
- the basic assumptions underlying quantitative method and qualitative method are seen to be fundamentally different, reconciling the two sets of assumptions can be difficult;
- time and other resources needed to conduct a mixed methods research may be difficult to obtain;
- competence in different techniques of data collection and analysis is necessary if maximum integration of qualitative and quantitative findings is to be achieved; and,
- the nature of the data obtained in a research that adopts a mixed methods approach may suggest more compelling results of the qualitative component than the quantitative component and vice versa.

### **The method adopted for the study – multimethodology**

There are several methods that can be conveniently categorised as either qualitative or quantitative methods. For instance, survey research and experimental research are two types of the former while the latter as explained earlier, comprise naturalistic inquiry (field research) and nonreactive methods. Multimethodology refers to the combining of whole or parts of these methods either originating from the same or different paradigms in particular research situation. By this definition, mixed methods is actually a type of multimethodology in which research methods associated with different, often contrasting, paradigms are combined in a research situation. Mingers and Brocklesby (1996) have pointed out that there is a whole range of possibilities of combining methods; methods may be combined in the same or across different interventions, combined methods can come from different paradigms as in mixed methods or parts or whole methodologies can be combined (so called partitioning). Brewer and Hunter (2006:4) hold that the fundamental strategy in multimethods (to use their label for multimethodology) is to “attack a research problem with an arsenal of methods that have no overlapping weaknesses, in addition to their complementary strengths”. Another possibility, which Dainty and Lingard (2006) reported in their study of gender issues

and career in the construction sectors of UK and Australia, engenders the integration of results of different studies conducted using a multimethodology approach.

The nature of many social issues makes imperative the use of a multimethodology approach. To solve some social issues, diverse information may be required which the tools of multimethodology can better provide than the traditional single methods. Additionally, Brewer and Hunter (2006:15) argue that solutions to research problems based upon multimethodology are likely to have a firmer empirical base and greater theoretical scope since such methods may be grounded in different paradigms. Denzin (1978), cited in Dainty and Lingard (2006) is apparently in favour of multimethodology albeit labelled triangulation, when he argues that no single method can ever adequately solve the problem of rival causal factors because different methods can reveal different aspects of the same problem.

#### **Why multimethodology was the most preferred strategy**

In pursuing the stated research questions, it was noted in part, that a multiple world view presented the researcher with a better understanding of the issues raised in relation to health and safety management within the study's setting. Secondly, information required to shed light on health and safety management within SMEs, in the light of the research questions posed, necessitated the adoption of both quantitative (specifically, survey method) and qualitative/field research techniques. While the adoption of survey methods allowed information on the incidence of health and safety management practices and the impact of the environment on such practices to be obtained, owner/managers' opinions on health and safety and those of other stakeholders is most amenable to the field research method. It is worth emphasizing here that it is the demand for particular types of information posed by the research questions in the study that dictated the choice of the multimethodology strategy for the present study.

In deciding on the strategy to be adopted, it was noted that using either a qualitative or quantitative approach alone may not provide complete insights into health and safety management in SMEs. For instance, a survey approach alone was likely to play down on the dominant role of owner/managers in health and safety management within construction businesses. Likewise, qualitative design alone will not provide adequate descriptive

information on broader issues such as the incidence of compliance with regulation, SMEs relations with government institutions with regulatory duties. Furthermore, it will not provide evidence to support generalizations about health and safety management practices.

There are a number of advantages associated with multimethodology strategy. First, in testing the validity of theories involving multiple measures of theoretical concepts and many varied hypotheses, multimethodology may play a useful role because of its power to add to the strength of evidence. Conventional single method approaches are likely to be inappropriate in such situations.

Secondly, in order to investigate the validity of theories, the popular procedure adopted by subsequent studies is often, to replicate previous methods. The repeated use of the same method makes it a good reason to try a different method.

Thirdly, it is unlikely in some types of research situations that a single method will be capable of accomplishing all the research objectives equally well. Each research method has a unique strength which all the other types lack. For instance, the acclaimed weaknesses of conventional research methods are that; nonreactive methods are prone to reactive error, non experimental research lacks causal precision, nonfield studies tend to be artificial and overly simplified and nonsurvey research tends to be weak in generalizability (Brewer and Hunter 2006:34). In the social sciences, it is acknowledged that there is no single approach that could prove effective in answering many research questions, although one research strategy could be more suited to a given research topic than another (Curran and Blackburn 2001:45-46). These arguments make the adoption of a combination of methods with complementary strengths appealing.

Fourthly, reasons of imperfections in particular single methods or research situations where the use of the ideal method is infeasible can limit the use of single method approach. In such situations the researcher has a choice of adopting additional methods to corroborate findings of the other method. Thus, better result can be achieved using multimethodology strategy.

Fifthly, use of multimethodology produces more diverse data than single methods. Diverse data gives the researcher the opportunity to compare results and findings from different data sets. The use of single methods will limit, if not make impossible, such comparisons. Finally, methodological biases associated with single methods can be avoided by the use of multimethodology since data from one method could corroborate evidence provided by another method and vice versa, forming the basis of the a multimethodology study's findings.

Multimethodology needs to be employed in research with caution. The prior use of one method in multimethodology can affect the next method's observations. For instance, in the use of a survey method followed by experimentation, respondents' behaviour as experimental subjects can be affected by their earlier experience as survey participants. Ways to insulate respondents from such effects include; misrepresenting the purpose of the study, disguising the investigator and concealing data collection from subjects where possible.

The costs (money, time and effort) of conducting a study employing a multimethodology strategy as one would expect, would be higher than any of the constituent methods employed in the study alone.

### **5.3 RESEARCH DESIGN**

A research design sets out guidelines that linkup the elements of methodology adopted for a study namely; relating the paradigm to the research strategy and then the strategy to methods for collecting empirical data (Denzin and Lincoln 2000b:22). It also includes practical procedures adopted for accessing the subjects of the research. This study adopted a multi-paradigmatic position argued to follow from the study's context (SMEs) and the diversity of information needed to shed light on health and safety management. A multi-paradigm view essentially underscores the adoption of multimethodology. Employing a single method in the study would be analogous to observing the physical world using a particular instrument; the image produced is inherently, a representation of that world seen from the angle of the method used. In a real world of complex, multiple realities no single method of observation can prove adequate.

Gaining access to construction SMEs in the study setting warranted a method of approach that would enable the researcher getting acquainted with the study setting and also, win the trust and cooperation of key persons in organisations and government departments which could enhance the researcher's access to owner/managers. Owner/managers are busy and contact with them, gained particularly through their respective associations (either ASROC or ABCECG) was likely to win their cooperation and active participation in the research. Meetings, particularly held with key persons in organisations, proved an effective means by which data collection was made possible in the natural state of the study's setting. For instance, it is common in the course of an informal meeting with persons for the first time to let them know or they ask about ones background (eg where you come from, what your tribe is and so on). If one happened to be of the same tribe with the spouse of the person met the first time, then a relationship is struck in which one is either an in-law or husband<sup>5</sup>. Meetings, in this sense, facilitated the use of culture to advantage the work of the researcher in the field.

Organisations and government departments and agencies with functions relating to health and safety in construction afforded the researcher the opportunity of appreciating the task of data collection and the interplay of institutional, economic and policy environments of Ghanaian construction SMEs. These other organisations and government departments and agencies included:

- Labour Department;
- Factory Inspectorate;
- Environmental Protection Agency;
- Ministry of Health;
- Ghana Employers' Association;
- Architectural and Engineering Services Limited;
- Ghana Highways Authority;

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<sup>5</sup> This happened in the field in which the researcher's meeting with one regional president of ABCECG resulted a relationship struck; the researcher being an in-law as the president's wife hailed from the same town as the researcher.

- Ministry of Works and Housing; and,
- three private consulting firms in the built environment.

Fieldwork in the first phase involved data collection using semi-structured interviews, formal and informal meetings with key officers of the above organisations and government departments and agencies. Secondary data consisting of health and safety related acts, annual reports, company newsletters and organisational charts also formed part of the data collection effort at this phase of the study.

The second phase involved the conduct of a survey. Questionnaires with both closed and open-ended questions were used at this phase. This was followed by a third phase in which qualitative data from 26 purposefully selected SMEs was collected and analysed to provide elaboration on the quantitative data and findings. The survey questionnaire consisted of closed and open ended questions to examine the significance and incidences of health and health and safety practices of construction SMEs within the study setting and the constraints they face in managing health and safety. The data obtained was used to determine associations between independent variables identified in the literature and health safety management practices and to examine SMEs' relations to and interactions with the relevant institutions and occupational health and safety regulatory system. This, therefore, provided descriptive analytic dimensions of the health and safety management as well as detailed investigations of associations between variables as a precursor to qualitative investigations.

The third phase was the main interview phase. It involved face-to-face interviews with selected SMEs which participated in the survey, observations of construction processes on project sites of the SMEs, and documentations relating to health and safety, with the view to understanding the survey responses in a greater detail. Figure 5.1 summarises the research design for the study. Detailed descriptions of how access was gained and methods of data collection contained in the research design are presented in the sections which follow.



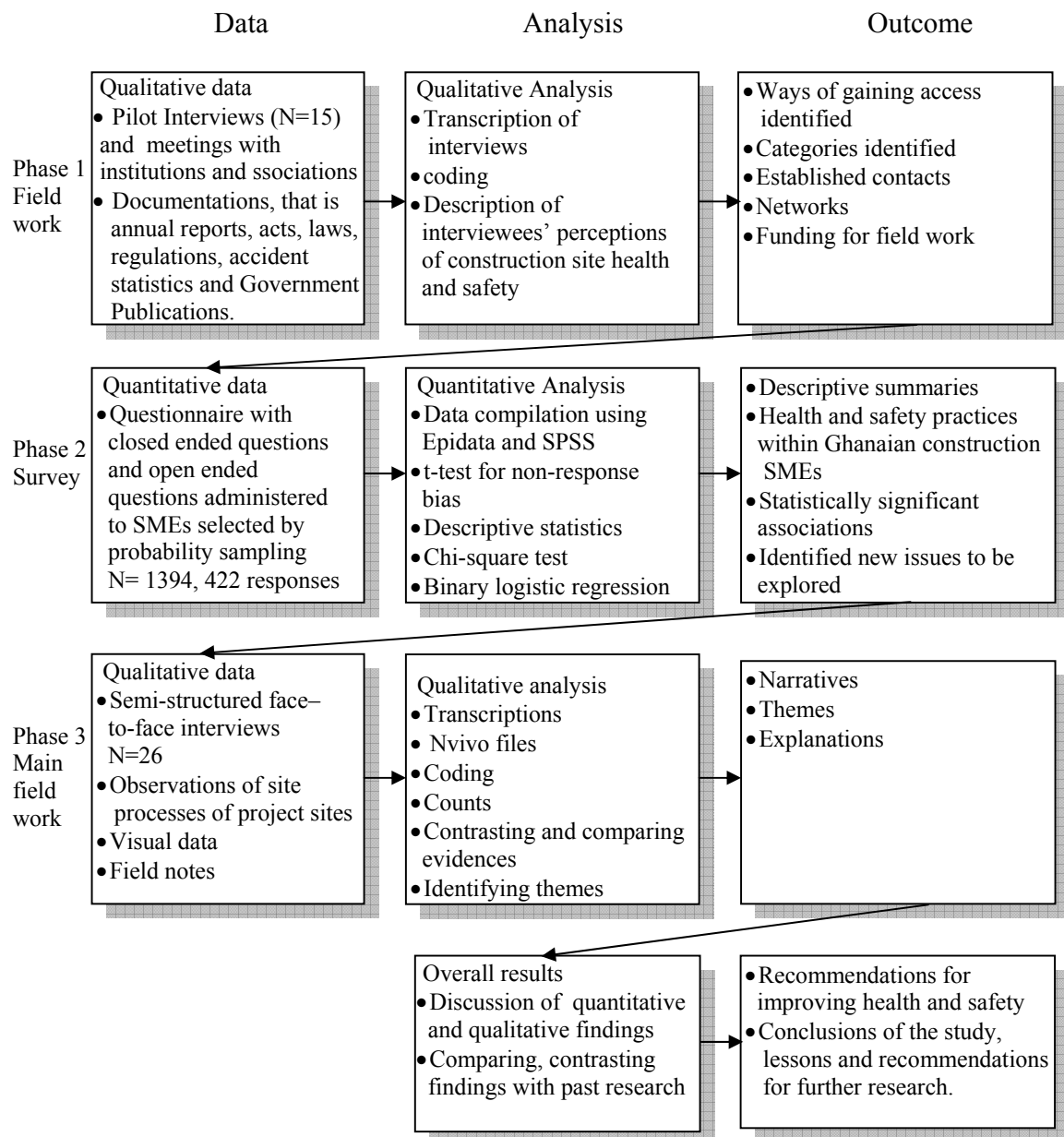


Figure 5.1 Methods and expected outcomes

### 5.3.1 ACCESSING THE SMES' OWNER/MANAGERS

Literature suggests there are difficulties that hamper research on SMEs (Curran and Blackburn 2001:5, 59). The difficulties associated with researching into SMEs and the steps taken in the present study to overcome difficulties in accessing owner managers are discussed in the paragraphs and the section that follow.

Owner/managers of SMEs are generally under considerable pressure and typically perform many functions, making it difficult for them to take some time off their busy schedule to participate in research. Unless an owner/manager sees participation in the research to be of some benefit to his business, he/she is likely not to cooperate. A strategy to secure cooperation of owner/managers is therefore necessary.

Many owner/managers are sceptical of academics. Some owner/managers fear that research findings might influence policy-makers to implement more laws, the cost of which is difficult to pass unto customers<sup>6</sup>. It is necessary to assure participants that there are benefits to be derived from the research and possibly, that research will seek to solve problems the sector is facing.

Recordkeeping is problematic in SMEs, because of their informal management culture. In collecting data on SMEs one has to rely on various sources of information in order to capture what goes on within the businesses. Where there is some form of documentation, owner/managers may keep it in secrecy feeling that parting with it may lead to loss in their reputation. Thus, data collection relating to SMEs requires more effort on the part of the researcher than in the case of larger businesses.

Lists of SMEs where there are any, are rarely up to date, particularly in Ghana where government departments responsible for registration of companies have fewer resources for the effective management of their database. In Ghana, the responsibility for registering contractors lies with the MRT and MWH. However, research has indicated that neither of these government departments have an up to date record of contractors (Eyiah and Cook

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<sup>6</sup> The author's initial interaction with one of the regional presidents of the Association of Building and Civil Engineering Contractors of Ghana is a case in point. The regional president who is also an owner/manager complained of difficulties he faced in complying with health and safety regulations on his sites in addition to the cost and time involved in transacting business and, expressed the fear of research findings used to set unreasonably high standards without considering the views of stakeholders particularly, contractors.

2003). The lists of construction businesses compiled by these departments will contain new businesses but are likely to contain businesses which have long ceased to operate.

Research on SMEs is likely to suffer from size related response bias, that is, smaller size categories of SMEs being much less likely to respond than larger ones (Curran and Blackburn 2001:61). This will result in the problem of larger size categories of SMEs being overstated while those of smaller ones are understated. Secondary data which contains the size distribution of businesses of the study population can be used as a yardstick to ascertain whether data obtained from the field is biased towards any particular size category.

### **Procedure adopted to gain access to SMEs**

The magnitude of the task of gaining access to SMEs was not underestimated, particularly when the fieldwork was to be conducted by a lone researcher in a developing country. As Buame (1996:50) has rightly pointed out, conducting research in a developing country is like fighting a battle, even more so when researching a sensitive topic. Health and safety is a sensitive topic because it is often an area of conflict between workers and management of a company. Where management is found wanting because of lack of adequate arrangements to ensure the health and safety of their workers, they can misconstrue the motives of a researcher or be apprehensive of the presence of a researcher because of fear of being reported to enforcing agencies.

The approach adopted involved first conducting an exploratory study of the field setting with the aim of familiarizing with eventual respondents, establishing the necessary contacts and securing the cooperation of organisations working closely with SMEs and to identify issues likely to impact on health and safety management in the setting. The initial approach therefore involved discussions and exploratory interviews involving key organisations and government departments having health and safety responsibility. The institutions covered included; employers' associations, contractors' associations, Construction Materials and Building Workers' Union and large consulting organisations in the built environment. The interviews had two primary aims; to assess how the environment impacts on health and safety management and to ascertain ways of gaining access to construction SMEs.

Introductory letters (refer to Appendix A) were personally delivered to the aforementioned institutions and meetings held with senior management and chief executives to explain the purpose of the research study and the benefits to be derived. The national contractors associations accepted the task of securing the cooperation of their members to participate in the research. Telephone numbers of regional executives were made available to the researcher and letters were also written to the same regional executives (refer to Appendixes A and B). Arrangements were also made for the researcher to participate in meetings of the associations organised at both national and regional levels. The participating government departments and agencies were willing to provide assistance by providing the researcher with their annual reports, secondary data relating to health and safety and allowing the researcher to participate in activities of the departments involving construction SMEs. The activities outlined by the departments which the researcher could participate included; inspection of projects and monitoring contractors' compliance with labour laws and health and safety standards prescribed in regulations.

In the second phase, meetings were held with regional presidents and executives of the contractors' associations in regions where fieldwork was conducted. The rationale behind the research was explained, pointing out the benefits to the associations and the academic nature of the research to allay fears that the research may have political undertone. The regional executives were assured that the recommendations of the research will be sent for them to evaluate and thus contribute to improving the health and safety of their project sites.

### **5.3.2 QUESTIONNAIRE SURVEY**

De Vaus (2002:5) refers to surveys as a structured approach to data collection and analysis that relies on a particular logic. Data relating to a set of variables is obtained for each case and recorded in the form  $N \times V$  matrix, where  $N$  is the number of cases and  $V$  the number of variables of interest in the study. Survey data may be collected employing a number of techniques; telephone interviews, face-to-face interviews, postal questionnaires and email questionnaires. Cross-sectional surveys are designed to collect data at one point in time while longitudinal survey designs collect data that reflect the time dimension of social life. The time constraints for conducting fieldwork for a PhD meant the adoption of a cross

sectional survey was the only feasible option for the present study. Most SMEs' owner/managers have more than one telephone line and the frequent problems associated with mobile network providers compel many of them to frequently change from one service provider to another providing better service. For this reason, telephone interviews were not employed for the study. A mail questionnaire was designed to collect data on the incidents and significance of health and safety management within SMEs within the constraints of time. The rationale behind the survey included:

- to provide a description of health and safety management of construction SMEs within the study setting;
- to examine statistically significant predictors of health and safety management of SMEs in the study population;
- identify key problems preventing SMEs from managing their operations in a safe and healthy manner; and
- to inform the selection of SMEs for follow-up semi-structured interviews with their owner/managers; and,
- to direct observations at project sites.

The questionnaire developed and used in the study was pilot-tested involving fifteen construction SMEs in regions different from the study regions in Ghana. The final questionnaire developed and used in the study comprised questions with fixed response categories (dichotomous, and multiple choice) along with open-ended questions (Appendix D). The questionnaires were divided into two sections. The first section requested profiles of construction SMEs (eg. experience, position of respondent, and characteristics of respondents' businesses such as telephone number(s), address, type of work the business undertakes, number of employees, year of establishment of the business, the type of contractor classification the business had, and turnover). The second section elicited response on the health and safety management practices of the owner/manager's business. The section also contained open-ended questions on constraints the businesses faced in the management of health and safety and suggestions for improving health and safety on construction sites.

### **5.3.3 SEMI-STRUCTURED INTERVIEWS**

Depending on the type of structure employed, interviews can serve as useful tools for collecting qualitative data because they allow researchers to understand research subjects' construction of reality in their own terms. The commonest typology of interviews includes; structured interviews, semi-structured interviews and in-depth or unstructured interviews. Structured interviews use questionnaires, usually read to the respondent and the answers given recorded by the interviewer. Semi-structured interviews are based on predetermined themes, with interviewees being asked questions relating to the themes including probing questions. Unstructured or in-depth interviews are loosely structured and conducted informally with no predetermined list of questions. Saunders et al. (2007:314) note that semi-structured interviews may be used in order to understand the relationships between variables, particularly those revealed through a descriptive study. Questions asked around particular themes allow interviewees to supply answers from their view point. Prompts and clarifications enabled them to provide elaborations on the answers given. Probing questions enable a greater depth of the interviewee's views on the themes and emerging ones to be revealed.

Semi-structured interviews were adopted for the study in light of the type of research questions developed and the need to explore the responses obtained in the questionnaire survey in more detail. Semi-structured interviews also allowed meanings and perceptions of the health and safety management to be generated, in line with a subjectivists/constructivists mode of creating knowledge in the study context.

The interview questions were in three parts; part one on profile of owner/manager, part 2 on company characteristics, and part three on health and safety. Part three comprised open questions designed to gather information on the approach to health and safety, challenges to health and safety management, and strategies for improving health and safety at construction sites. The interviews adopted a conversational style, starting with an opening question to prepare the interviewee for further questions. Main questions were on central topics and followed by questions probing the answers offered (see Appendix C for interview schedule). The conversational style adopted facilitated the discussion of topics which, in the opinion of

the interviewees, were important. Further probing questions explored emergent issues such as culture and government policy on SMEs. The interviews were concluded by asking the interviewee if he/she wished to talk on other issues, which might not have been covered by the researcher's questions, and if he/she wished to ask any questions. The interviews lasted between 45 and 90 minutes with each participant (refer to Figure 5.2 for interview process).

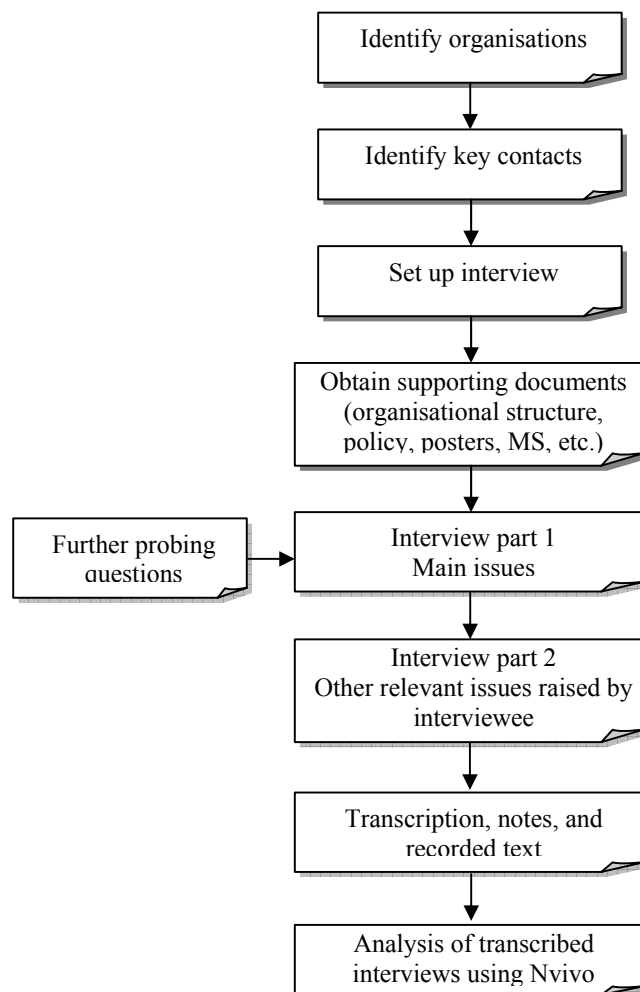


Figure 5.2 Interview process

#### 5.3.4 OBSERVATIONS

The goal of obtaining rich data justified a research design that combined other methods of collecting primary data such as observations. This involves observing workplace

relationships among the workers and work processes/procedures, recording, description, analysis and interpretation of research subjects' behaviour. Observations of are two types; structured observations and participant observation. The former assumes a systematic, predetermined structure of collecting data on the frequency of behaviour that interests the researcher while the latter originates from the field of ethnography involving the participation of the researcher in the everyday life of a social setting (Coffey 2006:214).

The present study adopted a participant observation technique in which the researcher was introduced to staff of project sites upon the first visit. This afforded the researcher an opportunity to develop rapport with both site management staff and operatives. Observations on site related to health and safety procedures, site processes and health and safety measures and use of personal protective equipment. Recording of observations involved writing field notes during and after each day's activities.

### **5.3.5 DOCUMENTARY SOURCES**

Documentary secondary data formed part of the data collection methods. This included written materials such as annual reports, administrative records, statutes, laws, acts, regulations, and minutes of meetings. Analysis of these sources help to triangulate findings based on primary data.

### **5.3.6 VISUAL DATA**

Photographs were taken of practices on site which, in the opinion of the researcher, represented workplace culture. Also safe or unsafe behaviour and unsafe conditions were photographed.

### **5.3.7 SAMPLING**

The sampling approach adopted for the study followed a sequential process (Teddlie and Yu 2007), involving first, a cluster sampling technique for administering survey questionnaires for the survey strand of the study followed by a purposeful sampling technique for the selection of SMEs for participation in semi-structured interviews.



## The population

Construction businesses in Ghana consist of both international foreign contractors and domestic/local construction businesses. The latter operate within the domestic construction market and usually have their offices situated at one of the regional or district capitals of the country. Ghana has ten administrative regions (refer to Figure 5.3) subdivided into 138 distinctive metropolitan, municipal and district assemblies. Construction businesses are registered members of contractors associations; the Association of Road Contractors of Ghana (ASROC) or the Association of Building and Civil Engineering Contractors of Ghana (ABCECG). The Headquarters of the two associations are in the national capital-Accra and regional branches have been established in the ten regional capitals of the country.

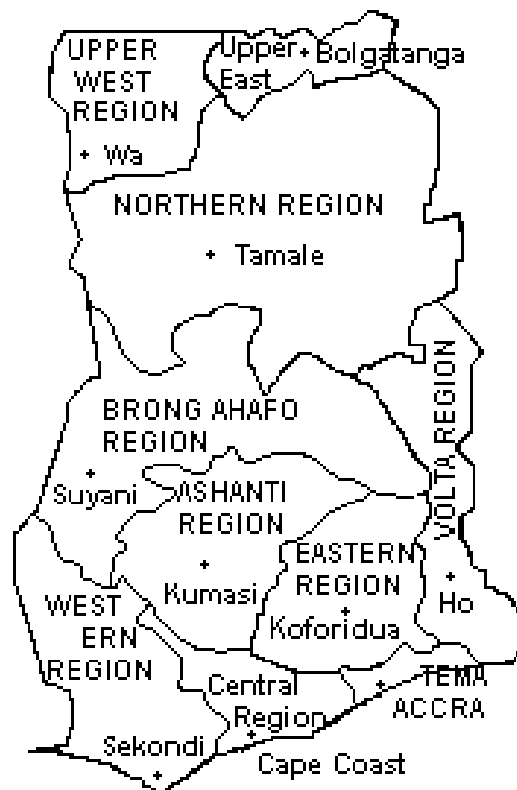


Figure 5.3 Administrative map of Ghana

Source [www.Ghanaweb.biz/GHP/img/pics/42291028.gif](http://www.Ghanaweb.biz/GHP/img/pics/42291028.gif)

Possible sampling frames available include contractors' registers of the relevant government ministries responsible for the registration of contractors and contractors associations. Contractors' lists compiled by these government ministries are often not updated (Eyiah and

Cook 2003). Their use as a sampling frame is therefore not recommended. Contractors' associations provide a more up to date sampling frame than the MRT and MWH since their lists comprise contractors actively engaged in projects and who pay their annual levies.

### **Cluster sampling**

Cluster sampling has been defined by Kelly (2006:29) as 'a survey sampling method which selects clusters such as groups defined by area of residence, organizational membership or other group-defining characteristics'. Cluster sampling allows inferences to be made from the sample about the population and it is the most suitable choice where a researcher is faced with time and other resources constraints. To cover all ten regions of Ghana is beyond the ability of a single researcher within the time and budget limits imposed by the study. Secondly, compiling a complete and up to date list of construction SMEs as a sampling frame, required for other probability sampling methods was impractical within the time limits for conducting the fieldwork. The ten administrative regions of Ghana were used as the sampling frame out of which four regions were selected using simple random sampling. Questionnaires were administered to all SMEs within the sampled regions.

Each of the four regions had relatively large clusters of contractors and an up to date lists of members of their associations. The questionnaires, together with postage-paid-addressed envelopes, were sent to all members of the associations of the two associations in the four selected regions (Table 5.1). One thousand three hundred and ninety-four (1394) questionnaires were distributed constituting over half of the population of contractors registered with the associations nationally. The respondents were not obliged to send their completed questionnaires through the post; they could send them personally to the offices of the regional associations. The participating businesses were reminded to submit their completed questionnaires at monthly meetings of the associations.

Table 5.1 Number of active members of contractors' associations in the selected regions

	Region 1	Region 2	Region 3	Region 4	Total
ASROC	186	78	44	56	364
ABCECG	423	316	136	155	1030
Total	609	394	180	211	1394

Source: Contractors registers (2006)

### **Purposive sampling**

The survey respondents formed the sampling frame for the selection of SMEs for conducting semi-structured interviews. The aim was to choose SMEs considered to have implemented some health and safety practices and others which had not. The two groups of SMEs were chosen with similar organisational characteristics to facilitate comparisons on common grounds.

The selection of the group of SMEs with health and safety practices was done by a sifting process based on criteria described here and in Figure 5.4:

- Each SME had put in place six key health and safety practices derived from literature on health and safety management and a case study of UK health and safety exemplars (Kheni et al. 2006a); accident reporting procedures, accident investigation procedures, method statements, health and safety inductions, hazard identification, and health and safety rewards.
- The second criterion was to find out which of the SMEs reported their accidents to the regional Factory Inspectorate Department or registered any of their sites or both. This gave an indication of the level of compliance with the Factories, Offices, and Shops Act 1987.
- The third criterion involved checking the labour relations record of the SMEs who had passed the second criterion. The names of the businesses were checked with the regional labour offices of their respective regions for evidence of labour disputes or poor labour relations in the past.

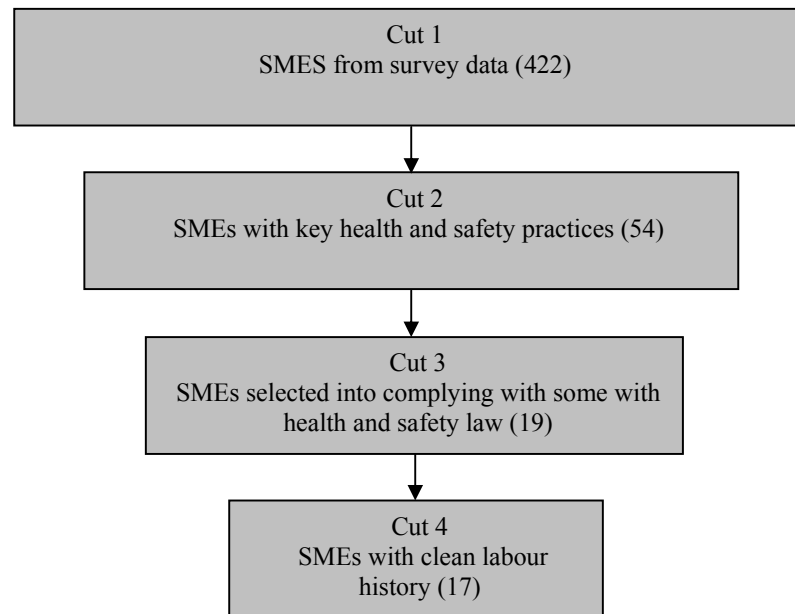


Figure 5.4 Selection of SMEs with health and safety procedures

The second group of SMEs which had not implemented any of the health and safety procedures implemented by the first group but which had similar characteristics were also chosen from the survey respondents in the questionnaire survey. They had neither registered their sites nor reported any accidents to the Factories Inspectorate Department. They were firms in the same regions as the first group and with similar organisational characteristics.

The organisational characteristics matches were:

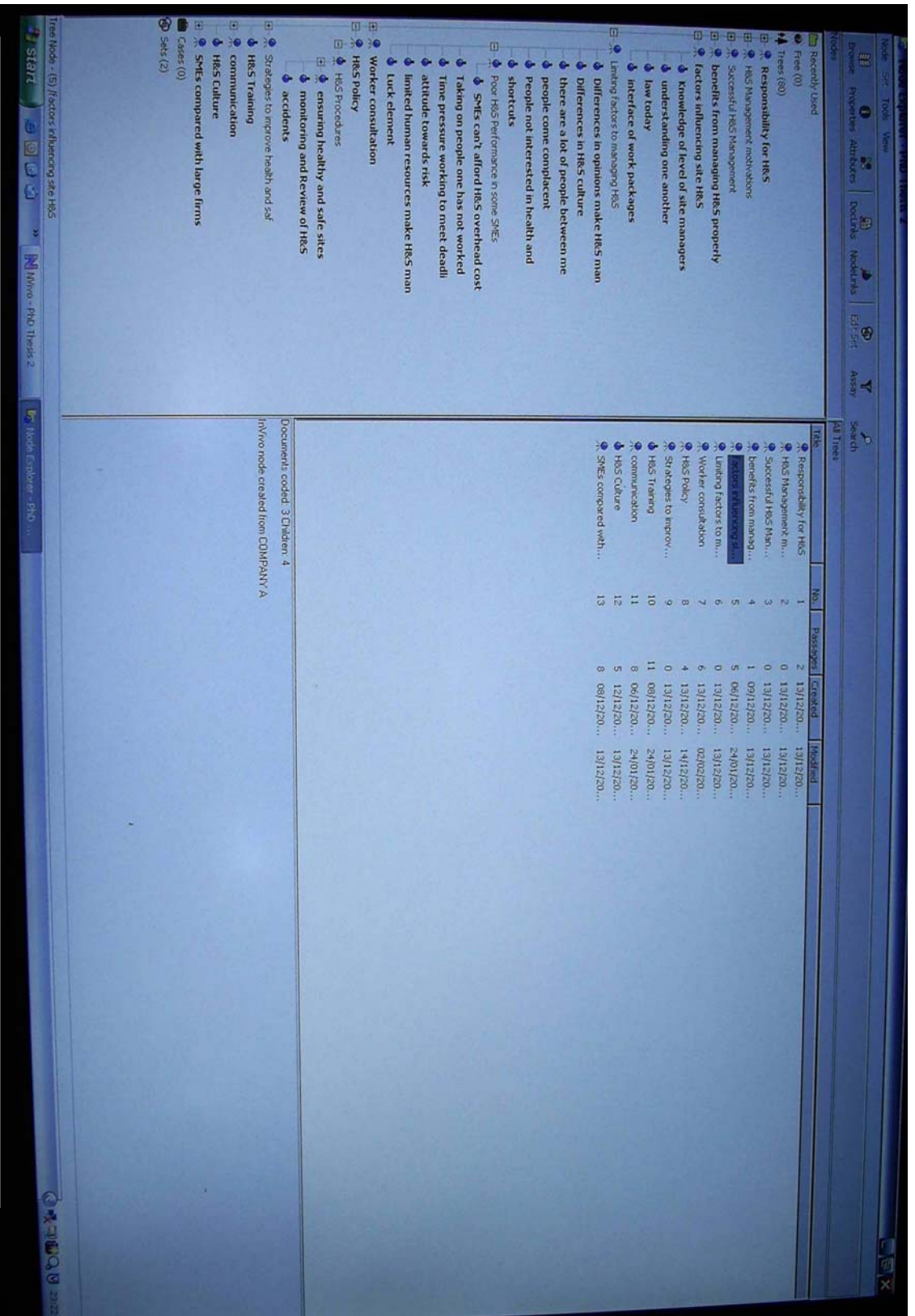
- the same size band; and
- similar annual turnovers.

Interviews of owner/managers of the two groups of SMEs continued until respondents' responses did not yield any new information, that is, up to a point where saturation was reached.

## **5.4 ANALYTICAL TECHNIQUES AND STRATEGIES**

### **5.4.1 DATA FROM FIELD RESEARCH**

Data obtained through the interviews and method statements read into Nvivo software was analysed using categories. Thinking, reflecting, linking elements of the data and developing memos and annotating of the contents of responses and documents allowed themes to emerge (refer to Picture 5.1 for screen shot of categories and Figure 5.5 for the analysis procedure). Comparisons were made between businesses with health and safety procedures in place and those without any procedures beyond those stipulated in contracts. This allowed an understanding of the attitudes of owner/managers to health and safety. Field text based on field notes and documents from the field were also analysed and interpreted in light of the interview reports. Different data were examined for corroborating evidences and contradictions.



Picture 5.1 Screen shot of NVivo coding

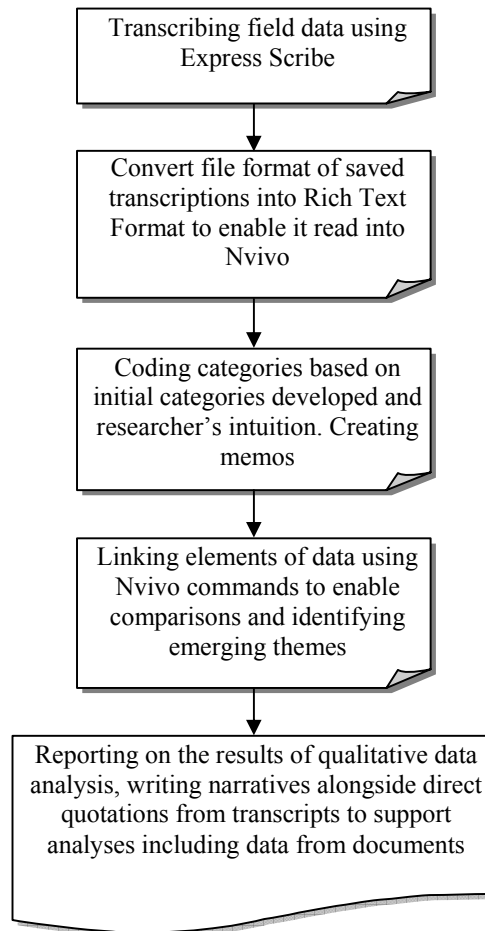


Figure 5.5 Procedure adopted for analyzing field interviews

#### 5.4.2 SURVEY DATA

The survey data was compiled using Epidata and subsequently read into SPSS. Late respondents were compared with early respondents using t-test to determine if there was non-response bias (the former being considered as surrogate non-respondents). Exploratory analysis of the data using frequencies and descriptives commands of the SPSS software enabled responses to be categorised and summary reports written (Table 5.2). Chi-square test was used to compare thirty-nine health and safety management variables describing the approaches to health and safety activities with five descriptive variables corresponding to definable characteristics of the businesses. The Pearson chi-square test was used to test the hypotheses that row and column variables were independent at a significance level of 0.05.

The dependent variables were dichotomous (binary) yes or no and the independent variables were scale or ratio. This made it possible to use the binary logistic regression technique (Cox and Snell 1989, Leech et al. 2005, Menard 2002, Meyers et al. 2006). The technique was used to analyse the links between statistically significant relationships found by the chi-square tests (Table 5.3). The dependent variables in this research is defined as Y=1 (implementation of health and safety practice) and Y=0 (non implementation of health and safety practice). X denotes organisational characteristics. The binary logistic regression is stated as the probability of Y=1 given X.

$$P(Y = 1/ X) = \frac{1}{1 + \text{Exp}(-\beta X)}$$

The linear predictor is defined as  $\beta X$  and stands for  $\beta_0 + \beta_1 X_1 + \dots + \beta_p X_p$ . The minimum recommended sample size is 30 times the number of parameters being estimated (Pedhazur 1997).

Table 5.2 Guide to exploratory analysis of the data

Question	Variables	Method	Output
Company information	Position	Frequencies	Frequency charts
	Experience	Descriptive statistics	Range, mean etc.
	Region (address)	Frequencies	Frequency charts
Question 1	Civil Engineering	Descriptive statistics.	Range, mean, etc.
	Building works	Descriptive statistics.	Range, mean, etc.
	Other works	Descriptive statistics.	Range, mean, etc.
Question 2	Number of employees	Compute new variables, categorise with visual bander, descriptive stats	Mean, range, etc., totals, SME classification of businesses
Question 3	Year of establishment	Compute new variables, categorise with visual bander, descriptive stats	Range, mean, etc, categories of businesses according ages
Question 4	Contractor Classification	Categorise, select, frequencies, and summary group reports	Frequency charts and group reports.
Question 5	Annual turnover	Descriptives and summary group reports	Mean, range, etc., and group reports.



Table 5.2 continued

Question 6	Membership of Associations	Frequencies and summary group reports	Frequency charts reports
Question 7	No safety budget	Count	Frequency charts
	Have a safety budget	Count	Frequency charts
	Budget amount	Descriptives	Least, maximum, range, etc.
Question 8	Relevant legislation	Frequencies and tables	Frequency charts
Question 9	Reporting accidents	Frequencies	Frequency charts
Question 10	Accidents	Descriptives, and frequencies	Mean, mode, range etc.
Question 11	Registration of sites	Frequencies	Frequency charts
Question 12	Why they register	Qualitative	Description
Question 13	Practices	Frequencies, Visual bander, Counts, Select cases	Charts, reports, and lists of cases
Question 14	HandS Mgt difficulties	Qualitative	Description
Question 15	Suggestions for improving HandS.	Qualitative	Description
Question 16	HandS Policy	Count	Frequency chart

Table 5.3 Guide to analysing relationships between variables

Analysis	Variable		Analysis method	Comments
	Dependent	Independent		
Comparison of variables	Health and safety activities (35 variables)	Number of full time employees, annual turnover, type of construction business, age of business, and experience of owner/manager	Chi-square	Test the Pearson chi-square hypothesis
Variables that predict others	Dependent variables found from statistically significant relations found from chi-square test.	Independent variables found from statistically significant relations found from chi-square test.	Binary logistic regression	Develop statistically significant predictive models

## 5.5 RESEARCH PROCESS

The stages the research passed through are summarised in Figure 5.6. Starting with a research idea, an extensive review of literature gained insights into the topic and captured the current state of research relating to the topic. The literature review helped to identify gaps in the literature and to develop research questions and objectives of the study. The questions raised and literature on research methodology guided the development of a research strategy and research design to address the questions and issues raised by the literature review.

The first visit to the research site was on 18<sup>th</sup> March 2006 to ascertain ways of gaining access to SMEs and to examine the institutional arrangements within the country for the management of occupational health and safety with particular emphasis on the construction industry. The visit helped to establish contacts with key persons working within institutions with which construction SMEs interface and laid the foundations for subsequent fieldwork. This exploratory phase was immediately followed up with another visit to the research site on 23<sup>rd</sup> May 2006 for the main data collection phase.

The cooperation and trust that the researcher had built up in the course of conducting the fieldwork, facilitated the evaluation of the recommendations of the research study by the study participants without the researcher visiting the research site for a third time. The recommendations were sent as email attachments to the regional executives of contractors associations and chief executives of institutions that participated in the study for onward submission to persons who were interviewed in the course of the fieldwork.

Interim reports on each of the visits afforded the researcher the opportunity to use the interim results of the fieldwork contained therein to write conference papers. Alongside these conference papers were also papers prepared on pilot studies carried in the UK and papers on the review of current trends in health and safety management and regulations in a developed country (UK). The task of pursuing a PhD programme of studies could not be accomplished without the student building up a repertoire of research skills and maturity. Seminars, workshops and professional development courses formed the main sources which the researcher relied on to develop the needed research skills.

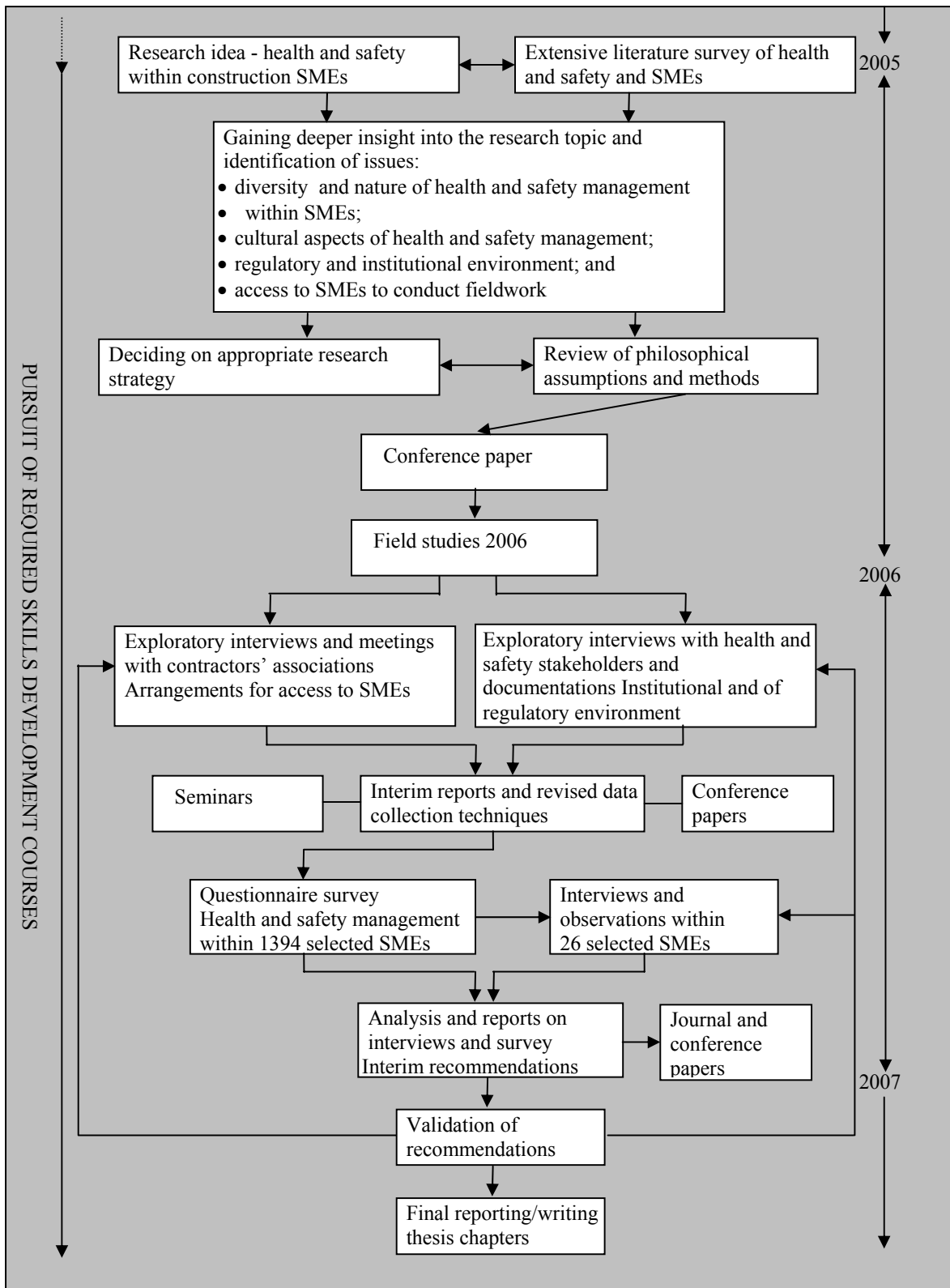


Figure 5.6 Overall process of the research study

## **5.6 SUMMARY**

This chapter has discussed the research strategy and the research design adopted for the study. Relative strengths and weaknesses of commonly adopted research methods have been discussed. The chapter has argued for a multimethodology approach which the study adopted based on the context of the study and information required to shed light on the phenomenon under consideration. The research design discussed in the chapter describes the links between three elements of the methodology adopted for the study; the underlying philosophical assumptions of the research, the research methods and the methods of data collection employed by the study. Analytical techniques adopted in the study have also been explained. The processes followed from the conception of the research idea up to the writing up of the thesis have been described. The next two chapters that follow present the results of the study.

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## **6 CHAPTER SIX: RESULTS OF THE STUDY: HEALTH AND SAFETY MANAGEMENT WITHIN GHANAIAN CONSTRUCTION SMES**

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### **6.1 INTRODUCTION**

This chapter presents the results of the fieldwork in the study setting. The first section presents the results of exploratory interviews conducted with senior management of institutions whose activities affect health and safety management within construction SMEs and health and safety aspects of construction projects. The section presents empirical data on the management of health and safety obtained from semi-structured interviews and documentary sources as narratives and quotations. The section presents results from the viewpoint of institutional stakeholders, the general legal and institutional environment within which health and safety management within Ghanaian construction SMEs takes place.

The second section of the chapter presents the results of questionnaire survey administered to construction SMEs. The results are presented as descriptive summaries of the incidence of health and safety management within a sample of SMEs and their relationships between the institutions mandated to implement health and safety standards within the construction sector. Results of logistic regression analysis are presented next, to evaluate key hypotheses on health and safety management. The opinions of the respondents on constraints they face in the management of health and safety and suggestions on how to improve health and safety performance of construction SMEs are presented in penultimate section.

### **6.2 RESULTS OF EXPLORATORY INTERVIEWS**

#### **6.2.1 ORGANISATIONS STUDIED**

Health and safety management in the construction industry of Ghana is an aspect of occupational health and safety management. It therefore comes under the jurisdiction of many institutions which are responsible for occupational health and safety within the country (refer to Table 6.1). On the public side, many departments and agencies and their respective ministries are mandated by laws to ensure minimum health and safety standards on

construction sites or some aspects of health and safety in construction are complied with. Private institutions and/or organisations which play a significant role in construction health and safety management include; consultants, clients, employers' associations, donor agencies, end-users and professional institutions.

Table 6.1 The main actors in health and safety management within construction SMEs

Ministry/institution/organisation	Departments/agencies	Number of interviews conducted	Health and safety role
<b>Public bodies</b>			
Ministry of Manpower, Development and Employment (MMDE)	Factory Inspectorate Department and Labour Department	Interviews (3), annual reports, accident figures	Implement health and safety laws; Factories, Offices Act, Labour Act, and Workmen's Compensation Law 1987
Ministry of Health (MOH)	Occupational Health Services Unit (OHSU)	Educational materials, meetings with staff	Worker education, curative care, first aid, provision of prosthesis
Ministry of Environment and Science (MES)	Environmental Protection Agency (EPA)	Interview (1) annual reports, EPA Act and regulations	Implement the Environmental Protection Agency Act 1994
Public Consultants	GHA, DUR, DFR, PWD, MRT, MWH and MME	Interviews (2) and Procurement Act, contract clauses on health and safety	Implementing contract clauses on health, safety and welfare and ensuring designs take into consideration the health and safety of site workers and end-users
Government as Client	Public clients eg. Universities, etc.	Interview (1)	Health and safety as a requirement in the list of preferred contractors
Ministry of Education and Sports (MOES)	Universities and Polytechnics	Syllabi (no interview)	Health and safety related curricula
Ministry of Justice and Attorney General's Department	Civil courts	Acts, Government Publications on health and safety	Revision of health and safety regulations, settlement of compensation for injuries arising from workplaces
<b>Non-Governmental Organisations</b>			
Trades Union Congress (TUC)	Construction Workers' Union (CBMWU)	Interviews (2)	Negotiating and enforcing collective bargaining certificate
Ghana Employers' Association (GEA)		Interview (1)	Provide human resource development training including health and safety training
Donor agencies	DFID, IDA, DANIDA, etc	Project documents	Promote health and safety by making adequate allowance for the cost of health and safety in contracts and ensuring contractors comply with health and safety provisions in contracts
Private consultants	Northern Consultants	Interview (1)	Ensure contractors comply with health and safety provisions in contract, incorporating the views of clients and end-users in project design
Contractors' associations	ASROC, ABCEG	Interviews (2) and meetings	Networking with health and safety intermediaries and enforcing agencies to raise health and safety awareness

## **6.2.2 THE IMPLEMENTATION OF HEALTH AND SAFETY STANDARDS: INFORMANTS' VIEWS**

Three government institutions were identified which had direct responsibility for the health and safety of construction sites; the Factory Inspectorate Department, Labour Department and the Environmental Protection Agency. Key informants within institutions with health and safety related functions were interviewed with a view to obtaining their opinions on the effectiveness of the institutional structure and health and safety legislation for implementing health and safety standards within construction sites managed by Ghanaian SMEs.

The Labour Department is an inherited institution from colonial rule and has been traditionally responsible for implementing the national labour policies of the country. The department is responsible for implementing the Labour Act and the Workmen's Compensation Law. Part XV of the Labour Act addresses the health, safety and welfare of workplaces. The annual reports of the departments for the years 2000 to 2004 showed the department always had less than 50 per cent of the approved establishment at post and operated under severe financial constraints. The comments of a respondent explain this point as follows:

“Like many government departments, the labour department suffers from high labour turnover and perennial budget cuts. Approved estimates of items relating to official journeys, utilities, office consumables, office accommodation, and other expenditure are not released in full, making the expected outputs of the department difficult to achieve” (Informant – Labour Department).

The department works closely with the Attorney General's Department in administering the Workmen's Compensation Law. Compensations relating to fatal accidents are decided in law courts. Human resources training within the department fell below the expected output planned and therefore seriously undermined the capacity of the department to effectively carry out its statutory functions. A total of 114 collective bargaining certificates were negotiated and concluded representing a decrease of 20% over the previous year. Commenting on workplace inspections, one respondent said:

“Our performance with regards to workplace inspections has always been below the planned number of inspections, in the region of 5-10 per cent of targeted inspections. It is a difficult task you know, considering the huge constraints facing the department” (Informant – Labour Department).

The Factory Inspectorate is empowered to enforce workplace health and safety standards, ensuring that all workplaces maintained minimum standards of health and safety prescribed by the Factories, Offices and Shops Act, 1970 (Act 328). Apart from carrying out workplace inspections, the department conducted workplace surveys, provided some occupational health and safety information, registered factories including construction sites and struggled to proactively promote workplace health and safety through workshops and seminars. The department faced human and logistical constraints, which stifled its operational efficiency. The department had eight regional offices out of the ten regions of the country with each regional office headed by a qualified factory inspector. The department had 34 qualified factory inspectors and manpower strength of 67. Inspectors were holders of a minimum of first degree in physics, or chemistry or mathematics or engineering and with an additional qualification in health and safety. The scheme of service was, as reported, not attractive and resulted in a high staff turnover of the department. One respondent lamented on the situation:

“Our scheme of service is not attractive so we recruit staff, they get trained for the basic rudiments of factory inspection and then after one year they find some lucrative places to go and work; so our labour turnover is high, up to fifty percent” (Informant – Factory Inspectorate Department).

Logistically, the department lacked up to date equipment and the equipment available was insufficient in numbers and types to enable the department to carry out various test in relation to occupational health and standards (Author’s field notes 2006). Additionally, many of the available equipment were said to have either batteries which had ran down or needed replacement of the whole units:

“We have some equipment; we have sound level meters, watt meters, air samplers and heat stress measuring equipment. Our major problem is how to maintain them. Most of the equipment is not available in the local market and getting their worn out parts is quite problematic. Even if you get the batteries, you still need to calibrate them and that is where the problem lies” (Informant – Factory Inspectorate Department).

This response indicated the department also lacked competent technicians to maintain equipment. The problems of the department were further compounded by lack of vehicles, which were needed to facilitate mobility of inspectors. There were only five vehicles available for use by officers of the department, with most regional offices having to do without any means of transport.



The Environmental Protection Agency had guidance material for implementing environmental regulations through a combination of inspections, networking and collaboration with stakeholders. The stakeholders included; the Labour Department, Factory Inspectorate Department, assembly members, traditional rulers and all security agencies. The department had representatives on national, regional and district tender boards, making it possible for environmental issues associated with public projects to be addressed. Its operations covered the ten regions of the country. It benefited from more diverse sources of funding defined by the Environmental Protection Agency Act (Act 490). Part III Clause 16(2) of the Act defines the sources of the environmental Fund as:

- grants from government;
- levies collected by the agency in the performance of its functions;
- donations from the general public, institutions and organisations; and,
- gifts.

A respondent commented on the activities of the Agency as follows:

“The key operational areas are in environmental education, enforcing compliance with environmental laws, monitoring the activities of organisations. This year seven organisations won environmental awards for continual Environmental Improvement Awards. The agency has a legal department that handles environmental cases before the courts. Presently, we have 11 cases before the courts that have not yet been resolved” (Informant – Environmental Protection Agency).

### **Implementation of health and safety standards at workplaces**

In spite of the numerous challenges facing the department, efforts were made at carrying some of the activities mandated by the Factories, Offices and Shops Act, 1970 (Act 328) summarised in Table 6.2. The most frequent activities undertaken by the department were general factory inspections, construction site inspections, and accident and incident investigations. However, these activities were undertaken in relatively more hazardous occupations such as factories, construction sites and plants because of the constraints mentioned earlier. Even so, only construction sites registered with the department were sometimes visited. One respondent commented on the discrimination in enforcement activities of the department as follows:

“With the constraints we face, we mostly discriminate by identifying the problem areas and concentrating our work there. We especially look at the accident rates and the hazardous nature of the job to decide on

which ones we must ensure comply with the law. We have few personnel, so I will not send my people to offices where, even though some of the hazards are latent and could result in chronic illnesses. We concentrated our inspection activities in workplaces where the risk of accidents is very high and where the workers are in eminent danger” (Informant – Factory Inspectorate Department).

Activities such as electrical inspections and testing of pressure plants had never been carried out because of lack of adequate manpower with the result that no sections existed to cater for those aspects.

Table 6.2 Type of activities undertaken by Factory Inspectorate Department

Activity	Frequency at which activity is carried out
General factory inspection	Carries out inspections throughout the country within limits of resources
Construction site inspection	Carries out inspections of some sites that have been registered with the Factory Inspectorate
Industrial hygiene surveys	Some times carries it out
Electrical inspection	Does not carry it out at all
Lifting equipment examination	Do carry it out as part of regular inspections
Pressure plants examination	Not examined at all
Scrutiny of factory plans	Examines all factory plans brought to its notice in order to give approval
Safety awareness seminars	Organises seminars and workshops with health and safety stakeholders and some employers about twice a year
Accident and incident investigation	Investigates all reportable accidents and dangerous occurrences notified to the department

Reporting of accidents and incidents was low because most employers were ignorant of their duties under the Factories, Offices and Shops Act 1970 and partly, for the fact that some employers were not aware of the different roles played by the Factory Inspectorate Department and Labour Department. This was evident from the numbers of accidents reported to the two departments (Table 6.3). Traditionally, the Labour Department is responsible for settlement of compensation claims to persons injured as a result of workplace accidents. This partly accounted for the rather higher numbers of accidents reported to it than the Factory Inspectorate Department. Dangerous occurrences, fatal and over three-day accidents are reportable to the Factory Inspectorate Department. Most employers do not

report these reportable incidents as the survey results presented in subsequent sections indicate.

Table 6.3 Industrial accidents notified to the Department of Factory Inspectorate and Labour Department from 1998 to 2004

Year	Factory Inspectorate Department			Labour Department		
	Fatal	Non-fatal	Total reported	Fatal	Non-fatal	Total reported
1998	9	175	184	-	-	-
1999	3	182	185	-	-	-
2000	8	262	270	401	6,516	6,917
2001	10	201	211	389	3,083	3,472
2002	9	134	143	414	7065	7,479
2003	2	135	137	523	5,085	5,608
2004	7	141	148	617	1,918	2,535

Source; Factory Inspectorate and Labour Department-Ghana (2006)

NB. The missing figures in the table were because of fire outbreaks in the Labour Department in 1998 and 1999

### **Trends in institutional influences on health and safety management within construction SMEs**

Statistics on construction accidents in Ghana was very scant providing little evidence of the health and safety performance of the sector. Available statistics on accidents reported for workmen's compensation indicated the sector had a poorer health and safety performance than most other industries (refer to Tables 6.4 and 6.5). A comparison of employment by sectors (Table 6.6) with the number of accidents occurring in the sectors for the two years given in Tables 5.4 and 5.5 amplified the poor health and safety performance of the construction sector. The construction sector employs 1.4% compared with agriculture 55%, manufacturing 11.7% and transport 2.2%. Thus, in terms of number of accidents per worker, construction led in the year 1975 and it was second to the transport, storage and communications sector in the year 2000. This interpretation is based on the assumption that sector employment numbers remain fairly constant over the years. The sector had a very low rate of reporting accidents and construction sites were rarely registered with the Factory

Inspectorate. A respondent indicated the difficulty of monitoring health and safety at construction sites and the attitude of contractors as follows:

“Unfortunately, construction, as we know, is one of the hazardous areas you can get workers in, but before you even get to a construction site, they have already started the work either out of ignorance of the law or their refusal to comply with the law. It is not like a factory where you know the location, and it is there for several years. If they close down they will come and tell you whereas most contractors will not register their sites and by the time the Factory Inspectorate is aware, it is near completion. Often, we don't get to construction sites to inspect the site layout and other safety and health aspects before they start construction” (Informant – Factory Inspectorate Department).

The most frequent causes of accidents on construction sites were indicated to be happening in the cause of operating machinery and equipment and falls from height. The accidents were also related to the skill levels of site operatives, as it was evident that most site operatives rarely attain the requisite level of competence to carry out their task. A respondent recounted construction site accidents as follows:

“Often, at the construction sites which we have investigated, it is cranes tilting over and other equipment on sites or workers falling from height. The other frequent causes of accidents are those which involved woodworking machinery, where injuries such as amputation and cuts result” (Informant – Factory Inspectorate Department).

Table 6.4 Occupational accidents reported from various economic sectors in Ghana from 1974-1975

Sector	Number recorded	Percentage
Agricultural/Forestry/Fishing	754	12.4
Mining and Quarrying	687	11.3
Construction	1108	18.3
Manufacturing	1661	27.4
Transport, storage and communications	913	15.1
Commerce	503	8.3
Electricity, Gas, Water and Sanitary Services	217	3.6
Service industries	221	3.6
Total	6064	100

Source: Workmen’s Compensation Law, 1987

Table 6.5 Work accidents and reported claims by industry division and economic sector from 1st January to 31st December 2000

Industry division	Cases reported and brought forward			Total of Cases finalised	Amount of compensation paid ¢
	Fatal	Non-fatal	Total		
Agricultural, Hunting, Forestry and Fishing	99	980	1079	247	175,633,506.58
Mining and Quarrying	46	102	148	36	477,168,829.35
Manufacturing	42	1770	1812	227	170,802,488.15
Electricity, Gas, and Water	67	224	291	40	334,330,409.96
Construction	56	846	902	134	125,447,249.15
Wholesale, Retail Trade, Restaurant and Hotels	13	151	164	16	73,840,224.36
Transport, Storage and Communications	32	2102	2134	108	73,480,611.38
Financing, Insurance, Real Estates and Business Service	-	81	81	3	5,519,676.04
Community, Personal Services	46	246	292	59	52,796,505.94
Activities not adequately defined	-	14	14	3	2,164,000.00
Total	401	6,516	6,917	873	1,491,183,500.91

Source: Annual Report of the Labour Department, 2000

Table 6.6 Employment of active population aged 15 and above by type of industry (thousands)

Sector	1991/1992		1998/1999	
	Percent	Absolute	Percent	Absolute
Agriculture	62.2	3744.4	55	5566.0
Mining/quarrying	0.5	30.1	0.7	70.8
Manufacturing	8.2	493.6	11.7	1184.0
Utilities	0.1	6.0	0.1	10.1
Construction	1.2	72.2	1.4	141.7
Trading	15.8	951.2	18.3	1852.0
Transportation/Communication	2.2	132.4	2.2	222.6
Financial Service	0.5	30.1	0.8	81.0
Community/Social Services	9.3	559.9	9.8	991.8
Total	100	6020.0	100	10120.0

Source: GLSS, 2000

Attitudes of construction SMEs towards construction site health and safety were seen to be poor due to lack of awareness of health and safety hazards on sites. Owner/managers of construction SMEs were also seen to have the desire to make more money which they considered to override other project objectives including health and safety. A change in attitude of owner/managers was therefore considered to be necessary for any improvement in the health and safety image of construction to be realised. The Factory Inspectorate suggested the change in attitude could come about through creating health and safety awareness and giving guidance on good health and safety practices. A respondent lamented the attitude of SMEs as follows:

“Small-scale contractors want to make the maximum profits and would not provide the necessary personal protective equipment for their workers. They do not evaluate the risk involved in carrying out construction work and as such do not take steps to minimise or eliminate hazards. Some of their workers are employed without completing their apprenticeship training; while some may not be trained. They may not be sensitised for their safety. Most of their workers are from the informal sector where they may not go under any regulation or union. They wouldn't want to spend their time, money and resources to train their workers to a certain standard of safety and health” (Informant – Labour Department).

The Labour Department issues labour certificates to contractors bidding for jobs to certify that they comply with all labour laws. This is one requirement of the conditions of contract for all public projects and most other projects undertaken in the country. However, it is difficult to assess whether a contractor issued with a labour certificate continues to comply with working conditions outlined in Labour Act, 2003 after winning a contract. It was only companies that were known to have poor workplace health and safety standards that were refused such certificates to deter other employers from violating the provisions contained in the Labour Act, 2003. The department embarked on health, safety and welfare education since 2000 by organising workshops with the Association of Road Contractors of Ghana and Association of Building and Civil Engineering Contractors of Ghana. One respondent commented on the success of the campaign as follows:

“The contractors associations are the focal point of our campaign and workshops they organised for their members have sessions for presentations on laws governing labour relations. Many contractors are now aware of the current Act; Labour Act, 2003 and comply with the provisions on health, safety and welfare contained in it. However, there remains a problem with self-employment and micro contractors” (Informant – Labour Department).

The Labour Department proactively promoted unionisation in the construction industry through sensitisation seminars and workshops. However, one respondent noted that workers' insistence upon their rights was below expectation.

“Unionisation is stronger in the construction sector than most other sectors. However, workers consult their union leaders especially on matters pertaining to health, safety and welfare only when they were injured or when suffering from illnesses they think are related to their occupation. We recorded thirty strike actions in the construction sector, alone in 2005 which indicates that there are workplace relations problems in the sector” (Informant – Labour Department).

### **6.2.3 THE ROLE OF CONSULTANTS AND EMPLOYERS' ASSOCIATIONS IN HEALTH AND SAFETY MANAGEMENT WITHIN CONSTRUCTION SMES**

Employers' organisations ran workshops and short-term programmes in workplace health, safety and environmental management. One respondent emphasised workplace health and safety thus:

“Safety is something that you cannot separate from the work environment so, in all our functional areas, safety plays a key role. For instance, we have the law that ensures that certain safety measures are practiced; it is legal so the industrial relations area, which is the core, tries to ensure that at the workplace safety standards are maintained. We promote employers interest and try to implement safety laws to ensure the gang of employees whose effort that we are generating to create the wealth in the organisation is optimised. In the consultancy and training departments we try to sensitise, disseminate information on health and safety” (Informant – Ghana Employers' Association).

Employers' associations encouraged firms irrespective of size to become members and had especially directed its efforts towards SMEs because of their poor health and safety record:

“The health and safety standard of SMEs has not been very encouraging and that is why employers must have the benefit of coming to join us so that we may take the advantage to educate them about safety law and health and safety standards to be maintained at the workplace. The only way we can reach SMEs is for them to come to the health and safety forums that we organise” (Informant – Ghana Employers' Association).

The impact consultants have made on the management of health and safety was minimal which was partly due to the attitude of consultants towards construction site health and safety, particularly cost consultants. Health, safety and welfare provisions in conditions of contract were at a very basic level. Contractors were expected to comply with health and safety clauses in the conditions of contract. The only mode of health and safety evaluation of

contractors was the requirement that they possess a labour certificate. One of the consultants had this to say on the attitude of consultants:

“The moral commitment to ensure safe and healthy sites is very low amongst consultants in this country. We do not set good example and that is the problem. If for instance I go to a construction site today and I put on the necessary helmet, boots and the necessary personal protective equipment then I will be doing a lot of service to improving construction site health and safety. Professionals are not committed to improving health and safety at construction sites; we talk of ensuring safer construction sites but we are not serious” (Informant – Architectural and Engineering Services Limited).

The consultants thought contract conditions should be more detailed on specific health and safety issues such as temporary works and contractors educated on health and safety. It was also noted that construction workers lacked sufficient empowerment to ensure health and safety provisions on site. This was attributed to the inactive tripartite committee and lack of national health and safety policy.

“Unfortunately even though we have some contract clauses that protect workers, they are not empowered sufficiently to insist on their rights and to take contractors to court. Also because the demand for labour is low and most workers are not literate most contractors take advantage of them” (Informant – Ghana Highways Authority).

However, it was noted that most designers now undertake professional indemnity insurance with respect to their liability if accidents occur as a result of poor design. This is an indication that most designers were aware of their responsibilities regarding health and safety but the lack of specific law on construction health and safety could hinder progress in this area. Designers can be held liable under common law for construction site accidents and illnesses resulting from poor design or lack of proper supervision. In broad terms, they are liable for tortious acts committed in relation to professional services they render.

### **6.3 SURVEY RESPONSES**

The exploratory interviews with key informants within institutions with related health and safety functions and consultants suggested a low level of involvement of consultants and employers’ organisations in health and safety management within SMEs. Also, resource constraints facing the institutions responsible for implementing Ghana’s occupational health



and safety management system means not much has been achieved in the maintenance of high health and safety standards on construction sites, particularly those managed by SMEs. In this regard, a survey questionnaire was developed to ascertain the level of implementation of health and safety practices on construction within construction SMEs and also, to examine the role of the characteristics of SMEs in health and safety management. More specifically, the aims of the survey were:

- to describe the health and safety practices of SMEs and their attitudes and concerns about health and safety; and
- to determine if there are any significant differences in the implementation of health and safety practices of firms with different organisational characteristics.

#### **6.3.1 RESPONSE RATE**

A total of 1394 questionnaires were distributed to construction SMEs in the study regions. Four hundred and fifty-two were received, out of which 422 were useable (refer to Table 6.7). It can be noted that the highest proportions of responding SMEs came from Upper East Region (37% representing 79 out of 211 questionnaires distributed). This can be explained by the relatively higher commitment of the regional executive members of ASROC and more frequent meetings held by the association during the period that data was collected in that region. Members of the association presented their completed questionnaires during meetings to the secretary of the association for onward submission to the researcher.

In comparison, the response rate from Ashanti Region (92 representing a response rate of 23%) was relatively poor considering the number of construction SMEs in that region. The highest number of questionnaires returned unfilled (32) also came from that region. Monthly meetings of the associations were not held during the period of the research, making it difficult for the researcher to make personal contacts with members as in the case of Upper East region. This might therefore be a contributory factor to the poor response of the Ashanti Region. Responses received from the Greater Accra Region were relatively better than Ashanti Region (a response rate of 31% representing 191 useable questionnaires out of 609 distributed in the region). The researcher attended two meetings held by the members of the ASROC in that region and this could have therefore influenced the response rate of Greater

Table 6.7 Response rate

	Greater Accra Region			Ashanti Region			Northern Region			Upper East Region			Grand Total
	ASROC	ABCECG	Total	ASROC	ABCECG	Total	ASROC	ABCECG	Total	ASROC	ABCECG	Total	
Number of distributed questionnaires	186	423	609	78	316	394	44	136	180	56	155	211	1394
Number of responses returned	67	132	199	31	83	114	14	46	60	29	50	79	452
Number of useable questionnaires	65	126	191	23	69	92	14	46	60	29	50	79	422
Response rate	0.35	0.30	0.31	0.29	0.22	0.23	0.32	0.34	0.33	0.52	0.32	0.37	0.30

Accra Region. Throughout the period of field work meetings were not held by the members of the ABCECG and this may partly be a contributory factor to the relatively low response rate of members of the association. ASROC is a spin-off from ABCECG, with good leadership from the executives. The association is further strengthened by close relations it has with the MRT which is responsible for registration of all road contractors. Notwithstanding the meetings which the researcher held with SMEs in some of the regions could have affected the survey response rates, there is no guarantee that the differences observed could not have resulted from geographical variations in the opinions of construction businesses with regards to health and safety enforcement activity. Research suggests that employers, particularly construction businesses have shown widespread discontent about the activities of enforcement agencies with most complaints coming from greater Accra and Kumasi compared to the Northern and Upper East Regions (Tetteh 2003).

Respondents who had returned questionnaires without completing them were requested through telephone calls to give reasons for not doing so. Ill health was the cause of failure to complete questionnaire in three of the cases while in eleven others, the owner/managers could not fill the questionnaires because they were barely literate. The rest (14 uncompleted questionnaires) could not be contacted on phone to ascertain their reasons for refusal/failure to complete the questionnaires. Two questionnaires returned were not properly filled and

were therefore not subject to analysis. The overall response rate was 30% (422 useable questionnaires out of the total questionnaires distributed), which is slightly less than the 37% to 68% reported in studies in the construction sector in similar settings (Anieku 1995, Dansoh 2005, Eyiah and Cook 2003). Considering the sensitive nature of the subject matter, and noting that the studies reported adopted convenience sampling, it is unlikely that better response rates than what was achieved could have been expected. Of the 422 useable responses, 114 (28%) were micro businesses, 223 (55%) were in the small business category, and 67 (17%) were medium-sized businesses.

Non-response bias was addressed by carrying out a t-test by comparing the characteristics of early and late respondents (considered as surrogate for non-respondents) (McKeiver and Gadenne 2005). The characteristics compared included; number of years of experience of respondents, size of business, types of works undertaken, age of business, classification of contractor, and safety management practices. The results of the test indicated no significant differences between the two groups. The data was therefore considered to have a low non-response bias and was adequate for the purpose of this research. A comparison of the responses with the distribution of construction SMEs nationally and within the sampling frame indicated micro, small and medium-sized businesses were fairly represented in the responses received.

### **6.3.2 PROFILE OF RESPONDENTS**

The majority of the respondents were managing directors with considerable number of years of experience. Over 80 per cent of the owner/managers had experience over 15 years. The responses to the questions could therefore be considered as true and accurate reflections of the state of affairs in the businesses in view of the positions and years of experience of the respondents.

The total number of employees of the businesses ranged from 1 to 197 with the mean number of full time and part time employees 20 and 15 respectively. The number of micro businesses was 114 (28%), small businesses were 223 (55%), and medium-sized businesses 67 (17%) (refer to Figure 6.1). The majority of the businesses were therefore small. This raises a

question of whether size and response rates were positively related which may lead to response bias (Curran and Blackburn 2001:61). However, there is evidence that some micro businesses operating as self-employed persons are reluctant to join both associations (Author's field notes 2006). Thus, the proportion of micro businesses for the whole country may differ much from the survey response.

The mean age of the businesses was 21 years with over three quarters (78%) beyond the age of 15. Most of the companies were therefore stable businesses with relatively little threat of exit from the sector. The businesses mostly undertook building construction. Forty-seven (12%) undertook only civil works and 93 (23%) undertook only building works. The rest specialised in civil and building works in various proportions. The typical proportion was 70% building works and 30% civil works, many of which were businesses with the MWH classification certificate. A ratio of 7:3 corresponding to the ratio of the value of building works to the value civil works contractors undertake is characteristic of the volume of jobs in the two areas in developing economies (World Bank 1984a). A probable explanation of the typical proportion of civil works and building works undertaken by the respondents may be due to the fact that the most astute owner/manager would like to diversify activities to take advantage of the volume of jobs in either area. Overall, the mean percentage of building works undertaken was 62% compared to 37% for civil engineering works.

Over half of the respondents (287 businesses representing 68%) had the MWH classification certificates while approximately a quarter of them (181 representing 43%) had the MRT classification certificates. Forty-six of the respondents (11%) had both MRT and MWH registration certificates. The distribution of the financial classes of the contractors with either classification schemes is given in Figure 6.2 and Figure 6.3. Businesses registered with MWH classification scheme were predominantly financial classes 1 and 2 (31% and 35% respectively) while those registered with MRT were predominantly financial classes 2 and 3 (30% and 29% respectively).

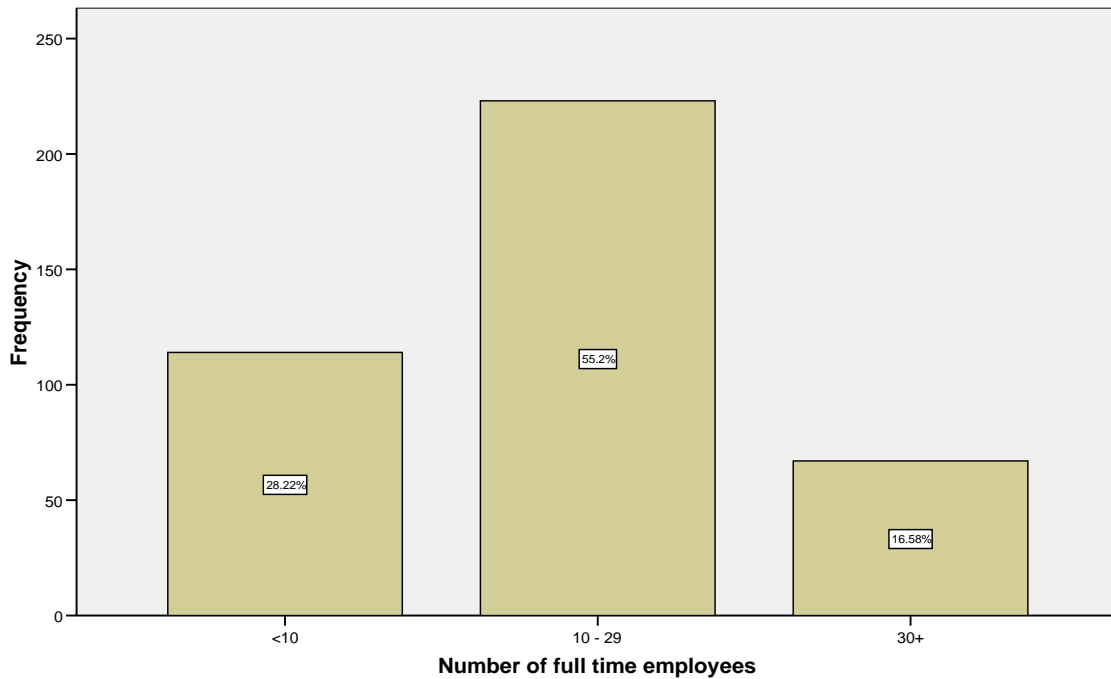


Figure 6.1 Number of businesses in terms of SME size categories

In Ghana, many construction businesses are registered as building contractors. This was reflected in the responses received; 68 per cent building contractors and 43 per cent road contractors. All financial classes (financial classes 1, 2, 3 and 4) were well represented for both categories of the respondents. The building contractors were registered as financial class 1, capable of undertaking projects of any value, class 2 capable of undertaking projects up to US\$500,000, financial class 3 capable of undertaking projects up to US\$200,000 or class 4 to undertake projects up to US\$75,000. Road contractors were similarly, classified as classes 1, 2, 3, and 4 capable of undertaking projects of any value, up to US\$1,250,000, US\$650,000 and US\$250,000 respectively.

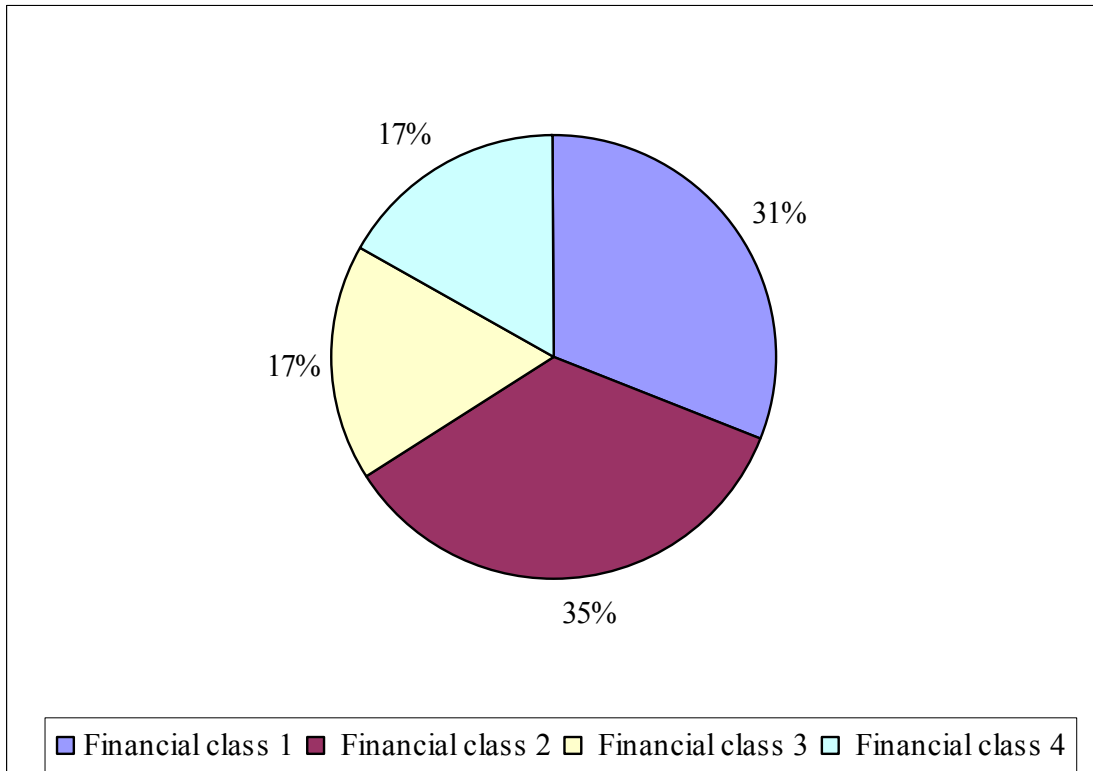


Figure 6.2 Financial classes of SMEs registered with MWH

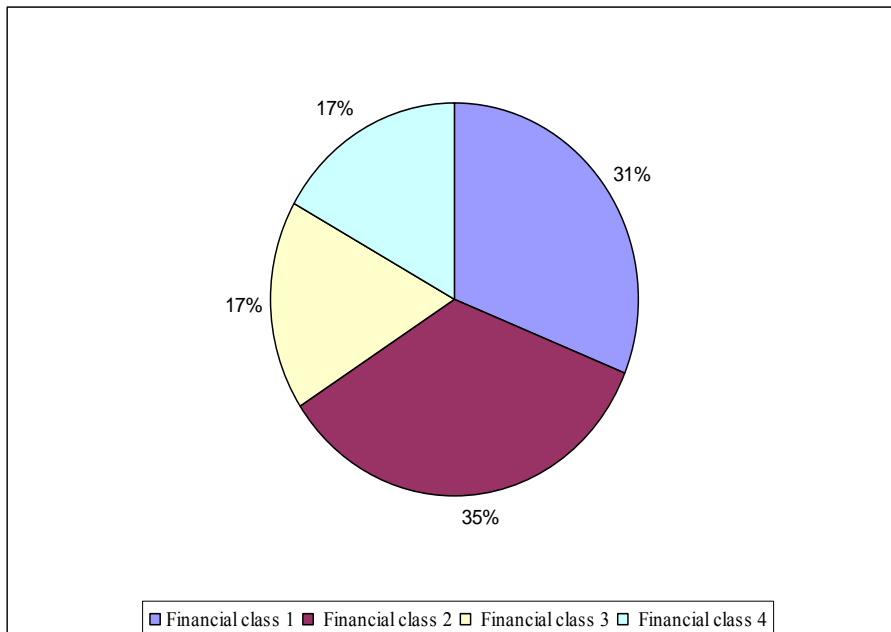


Figure 6.3 Financial classes of the businesses with MRT classification scheme

When asked of their turnovers in 2005, 136 (34%) said their turnover was more than one hundred million Ghanaian cedis but not exceeding five hundred million Ghanaian cedis (more than £5711 but not exceeding £28555 using exchange rate of 29<sup>th</sup> December 2006) (refer to figure 6.4). Twenty-six (6%) had a turnover below 100 million Ghanaian cedis (£5711). One hundred and seven (26%) respondents said their companies' turnovers in 2005 was more than 1 billion Ghanaian cedis (£57110) but not exceeding 50 billion Ghanaian cedis (£2855500) and one hundred and twenty-five (31%) said their turnovers were more than 500 million Ghanaian cedis (£28555) but not exceeding 1 billion Ghanaian cedis (£57110). Eight of the businesses had turnovers more than 50 billion Ghanaian cedis (£2855500) but not exceeding 100 billion Ghanaian cedis (£5711000). Only two businesses had turnovers more than 100 billion Ghanaian cedis. It should be worth noting that none of the building contractors had a turnover of more than 50 billion cedis (£2855500). More than half of the respondents' businesses (275 contractors representing 68%) were registered with the ABCECG while about a third (129 contractors representing 32%) were registered with the ASROC. Four of the businesses (1%) were members of the Electrical Contractors Association of Ghana (ECAG).

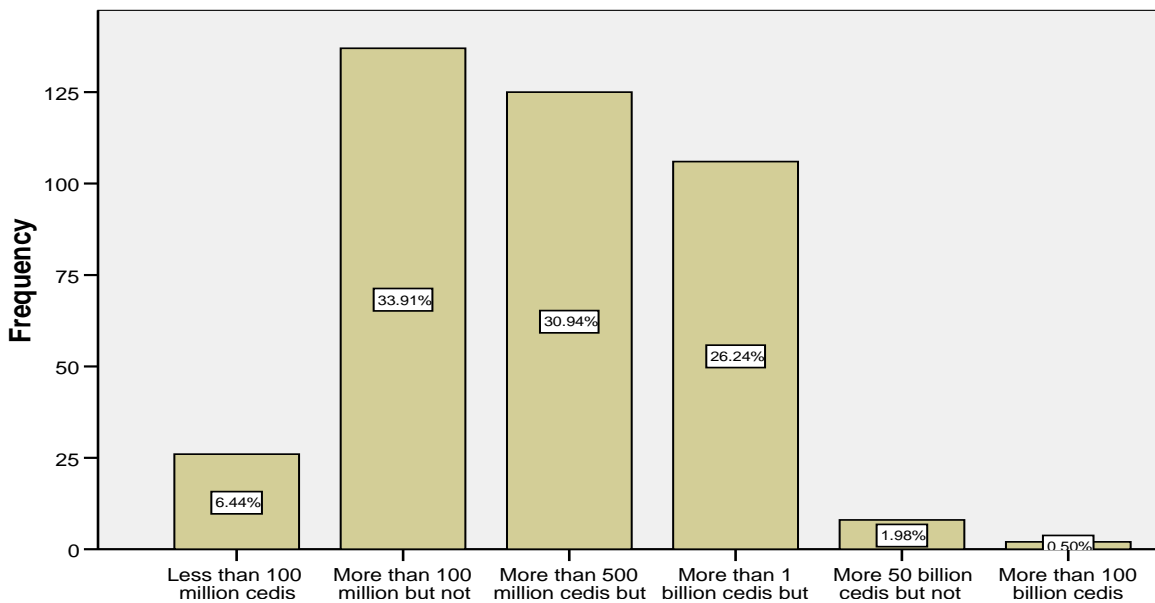


Figure 6.4 Annual turnovers of the businesses in 2005

### **6.3.3 ACCIDENT PROFILE OF RESPONDENTS' BUSINESSES**

When asked how many accidents had occurred in their businesses in the year 2005, approximately three quarters (73.9%) of the companies stated that they had experienced accidents of some sort. Over half (65.1%) of the respondents indicated they had experienced serious accidents in their business. Fatal accidents occurred in 49 of the businesses (12.1%). Of the businesses that had experienced fatal accidents 42 of the accidents were cases in which one employee died, 6 were cases in two persons died and 6 persons died in one of the accidents.

These responses do not accord with the response on whether they reported any of their accidents to the relevant of government department, which surprisingly indicated very few of the respondents reported their accidents to institutions responsible for occupational health and safety. Most of the accidents (57%) occurred within small SMEs, micro businesses accounted for 38% and medium-sized businesses accounted for 5% of the accidents.

### **6.3.4 COMPLIANCE WITH RELEVANT HEALTH AND SAFETY REGULATIONS**

Provisions in contract for health and safety are the most popular source of guidance for managing construction site health and safety by the businesses. When asked how well in their opinion their procedures met health, safety, and welfare provisions in a number of specified regulations, ninety-nine per cent (417) of the respondents stated that their procedures completely met contract conditions. One percent (4) said they did not know if their procedures met health, safety, and welfare provisions in conditions of contract (refer to Table 6.8). Responses on the Labour Act indicated that relatively few businesses had procedures in place to comply with the Act. Approximately half of the respondents (49% representing 208 respondents) said their procedures partly met the Labour Act and 44% (187) said their procedures completely met it. Sixteen of the respondents (4%) said their procedures never met the Act and eleven (3%) said they did not know if their procedures met the Labour Act.

The Factories, Offices, and Shops Act 1970 is the main regulation on occupational health and safety in Ghana. The Act requires construction businesses to notify over three day accidents,



fatal accidents and dangerous occurrences to the Factory Inspectorate (Section 4, 10 (1) and 11 (1)). They are also required to notify the Factory Inspectorate within seven days of taking possession of their sites (Subsections 5 and 6). However, as the responses indicated very few of the businesses were aware of their responsibilities under the Act. Over half of the respondents (61%) stated that they did not know if their procedures met the Act and 3% (14) said their procedures did not meet it at all. However, a quarter (25%) of the respondents said their procedures partly met it and 10% said their procedures met it completely. Approximately three quarters of the respondents (71%) said they did not register any of their sites as required under the Factories, Offices, and Shops Act (refer to Table 6.9). Thirteen per cent (56) registered most of their sites and 12% (50) said they registered all their project sites. Four per cent (15) registered some of their sites and indicated that some of their sites were small projects and as such, they did not register them. Other reasons given for not registering some sites included the location of sites and time pressures.

The respondents' opinion of the Workmen's Compensation Law with regard to their procedures did not differ either, with only 15% stating that their procedures met the Act. Thirty-one per cent (130) of the respondents said their procedures partly met the Workmen's Compensation Act and forty-seven per cent (200) said their procedures did not meet the Workmen's Compensation Law. Six per cent (27) said they did not know if their procedures met the health, safety, and welfare procedures contained in it. Some of respondents also stated that their procedures met the Sanitary Regulations of the Municipal Assemblies (11%) and the Environmental Assessment Regulations (16%).

When asked to which establishments they report accidents on their sites, over half (60%) said they reported their accidents to the Labour Department, 47% (198) said they reported to Police Motor Traffic and Transport Unit (MTTU), and only 7% (30) reported to the Factory Inspectorate Department. Accidents are reported to the Labour Department for the purposes of making accident related claims and disputes relating to working conditions. Many workers are ignorant of their rights under the law and rarely insist upon their rights beyond payment of salaries and wages they think are due them.

Table 6.8 How well the of businesses' health and safety procedures met relevant health and safety regulations

	Conditions of contract		Labour Act		Factories, Offices and Shops Act		Workmen's Compensation Act	
	Count	%	Count	%	Count	%	Count	%
Completely	417	98.8%	187	44.3%	44	10.4%	65	15.3%
In part	1	.2%	208	49.3%	105	25.0%	130	30.9%
Not at all	0	0	16	3.7%	14	3.2%	200	47.3%
Do not know	4	1.0%	11	2.7%	259	61.4%	27	6.4%
Total	422	100.0%	422	100.0%	422	100.0%	422	100.0%

Table 6.9 Registration of project sites with Factory Inspectorate Department

Project sites	Frequency	Percent	Valid Percent	Cumulative Percent
All project sites are registered	50	11.9	11.9	11.9
Most of our project sites are registered	56	13.4	13.4	25.2
Some project sites are registered	15	3.5	3.5	28.7
Non of the sites are registered	301	71.3	71.3	100.0
Total	422	100.0	100.0	

This, in itself, is a contributory factor to the low rates of reporting of accidents. Secondly, the close relationships that exist between most owner managers and their employers could be factor facilitating the settlement of such accident claims by mutual agreement between owner/managers and their employees. Four (1%) of the respondents said they reported to none of the mentioned departments and 3% stated the National Health Service as an additional department they reported accidents to (refer to Table 6.10).

Table 6.10 Establishments to which respondents reported accidents

	Factories Inspectorate Department		Labour Department		Motor Traffic and Transport Unit		None of the mentioned departments		Report to another department not mentioned	
	Count	%	Count	%	Count	%	Count	%	Count	%
No	392	93%	169	40%	224	53%	418	99%	409	97%
Yes	30	7%	253	60%	198	47%	4	1%	13	3%
Total	422	100%	422	100%	422	100%	422	100%	422	100%

### 6.3.5 HEALTH AND SAFETY MANAGEMENT PRACTICES

When asked of their health and safety procedures, over three quarters of the respondents said they had instituted measures in respect of first aid, portable drinking water, personal protective equipment and labour certificate on their sites (refer to Table 6.11). The rather high response to this question is in line with the responses to question 8 on whether their procedures met the requirements of health and safety provisions in conditions of contract. Public contracts contain clauses in respect of these health and safety items and in a few cases, they are covered by provisional sums. Over half of the contractors (66%) also cited insurance cover for project sites as a measure they carried out. Insurance of workers against injury is not compulsory by law although employers are required to take all necessary measures to indemnify the employer against damages resulting from accidents. Under the pressures of competition and desire to make high profits, contractors may tend to undermine these practices on project sites by pricing these health and safety items unrealistically. Thus, the amounts and types of first aid items, personal protective equipment and other measures may be insufficient in spite of the positive response on these health and safety practices.

Other health and safety procedures adopted by the businesses included: accident reporting (48%); rewards for safe behaviour (43%); documentation of method statements (27%); hazard identification (32); health and safety consultants (21); inductions (19%); asking workers of their ideas on health and safety (22%); using health and safety posters (27%); and accident investigations (19%). Site safety inspections were informal and very common (83%).

Table 6.11 Health and safety practices which are often provisions in conditions of contract

Health and safety measure	No		Yes	
	Count	%	Count	%
Provision of first aid	33	8.2%	371	91.8%
PPE	79	19.6%	325	80.4%
Provision of drinking water	36	8.9%	368	91.1%
Labour certificate before commencing works	54	13.4%	350	86.6%
Provision of cloak and toilet facilities	96	23.8%	308	76.2%
Insurance cover	139	34.4%	265	65.6%

## 6.4 ANALYSIS OF ASSOCIATIONS BETWEEN VARIABLES

### 6.4.1 HYPOTHESES

In order to determine if there was an association between the characteristics of the businesses and the health and safety practices they adopted, four hypotheses were developed relating to four measurable organisational characteristics (refer to section 4.6).

### 6.4.2 PROCEDURE FOR ANALYSING ASSOCIATIONS

#### Chi-square test

The Chi-square test was used to compare thirty-nine health and safety management variables that described the health and safety practices of the businesses with five descriptive variables corresponding to definable characteristics of the businesses. The Chi-square test was used to test the hypotheses that row and column variables were independent at a significance level of 0.05. The results of the chi-square test indicated statistically significant relationships between organisational characteristics and 21 health and safety practices (Table 6.12). These relationships merited further investigation using binary logistic regression.

Table 6.12 Chi-square test of significance

Dependent variable	Organisational characteristics				
	Size	Turnov.	Age	Exp.	Type
Health and safety policy	√	X	√	X	X
Accident investigation procedures	√	√	√	X	√
Safety officer	√	√	X	X	√
Accident reporting procedures	√	√	X	√	X
Health and safety consultants	X	X	X	X	√
Worker's participation in hazard identification	√	X	√	√	X
Rewards for exemplary behaviour	√	√	X	X	√
Using posters	√	√	X	X	√
Health and safety networking	√	√	X	X	√
Document method statements	√	√	X	X	√
Document risk assessments	√	X	√	X	X
Pricing health and safety in preliminaries	X	X	√	√	X
Identification of hazards	X	X	X	X	√
Disciplinary measures	√	X	√	√	√
Adequate welfare provisions	X	X	X	X	√
Health and safety inductions	√	√	X	X	√
Health and safety training for supervisors and management	√	√	X	X	X
Training of operatives	X	X	√	√	X
Health and safety performance targets	X	X	√	X	X
Site inspections	√	X	X	X	X
Safety budget	X	√	X	X	X

Legend:

Size= number of full time employees banded into SME categories

Turnov.= annual turnover of business in 2005

Age= number of years the business has been operating

Exp.= number of years respondent has been with the company

Type= classification of the business as civil engineering or building contractor

√= significant relationship

X= no significant relationship.

### Binary logistic regression

In investigating the hypotheses, the crux was to predict membership of the dependent variables (eg for health and safety inductions, the task is predict a business's chance of belonging to the category of businesses implementing health and safety inductions or those which do not implement the measure) (Agresti 1996). Discriminant analysis and logistic regression are techniques which can be used to predict group membership. However,

discriminant analysis can be used with only continuous independent variables. The dependent variables in the study were dichotomous (binary) yes or no and the independent variables were categorical and continuous variables. This made it possible to use the binary logistic regression technique (Askar et al. 2006, Cox and Snell 1989, Leech et al. 2005, Menard 2002, Meyers et al. 2006:221-253). The technique was used to analyse the links between statistically significant relationships found by the chi-square tests. The dependent variables in this research is defined as Y=1 (implementation of health and safety practice) and Y=0 (non implementation of health and safety practice). X denotes organisational characteristics. The binary logistic regression is stated as the probability of Y=1 given X.

$$P(Y = 1/ X) = \frac{1}{1 + \text{Exp}(-\beta X)}$$

The linear predictor is defined as  $\beta X$  and stands for  $\beta_0 + \beta_1 X_1 + \dots + \beta_p X_p$ . The minimum recommended sample size is 30 times the number of parameters being estimated (Pedhazur 1997).

Organisational variables that showed statistically significant improvement in predicting health and safety practices over the corresponding constant only models are reported. In addition, there was no significant difference between the observed values and the probabilities predicted by each model (Hosmer and Lemeshow 2000).

#### **6.4.3 ACCIDENT INVESTIGATION PROCEDURES**

Results of the binary logistic regression indicated that annual turnover and number of full time employees predict accident investigation procedures. The two-predictor model for accident investigations provided a statistically significant improvement over the constant-only model ( $\chi^2=215.23$ ,  $df=6$ ,  $N=422$ ,  $p=0.01$ ). The Nagelkerke pseudo  $R^2$  indicated that the model accounted for 55% of the total variance. This suggests that the set of predictors discriminate between businesses that institute accident investigation procedures and those that do not. Prediction success rate for the 422 cases was relatively high with overall prediction success rate of 78.5% and correct prediction rates of 65.6% for businesses having accident investigation procedures and 89.4% for those not having such procedures. Table

6.13 presents the regression coefficients (B), the Wald statistics, significance level, odds ratio [Exp(B)], and 95% confidence interval (CI) for odd ratios (OR) for each predictor. The Wald test indicates that annual turnover and number of full time employees are statistically significant predictors of decisions to institute accident investigation procedures. For an increase in the number of full time employees by one, there is a 1.06 times likelihood of business instituting accident investigation procedures.

Table 6.13 Results of binary regression analysis of accident investigation procedures

Step 1 Variables	B	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
						Lower	Upper
Annual turnover		75.508	5	0.000			
Annual turnover (1)	13.277	0.000	1	1.000	583636.826	0.000	.
Annual turnover (2)	22.998	0.000	1	0.998	972130.799	0.000	.
Annual turnover (3)	4.491	28.773	1	0.000	89.179	17.284	460.118
Annual turnover (4)	1.984	6.618	1	0.010	7.274	1.604	32.985
Annual turnover (5)	0.770	0.959	1	0.327	2.160	0.463	10.080
Full time employees	0.057	15.893	1	0.000	1.058	1.029	1.088
Constant	-3.241	17.213	1	0.000	0.039		

Variable(s) entered on step 1: annual turnover, number of full time employees.

#### 6.4.4 ACCIDENT REPORTING PROCEDURES

Turnover and number of full time employees also discriminate between businesses that institute accident reporting procedures and those that do not. The model indicated a statistically significant improvement over the constant-only model ( $\chi^2=73.03$ ,  $df=6$ ,  $N=422$ ,  $p<0.001$ ). The Nagelkerke pseudo  $R^2$  in this model accounted for 22% of the total variance. The overall prediction success rate was 62.9% and 56.5% for businesses instituting accident reporting procedures and 69.5% for those that did not institute such measures. Table 6.14

presents the regression coefficients (B), the Wald statistics, significance level and odd ratios and confidence intervals of the binary logistic regression.

Table 6.14 Results of binary regression analysis of accident reporting procedures

Step 1 Variables	B	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
						Lower	Upper
Annual turnover		26.359	5	0.000			
Annual turnover (1)	15.888	0.000	1	1.000	7944334.638	0.000	.
Annual turnover (2)	3.400	6.853	1	0.009	29.974	2.350	382.30 2
Annual turnover (3)	2.605	15.224	1	0.000	13.525	3.655	50.042
Annual turnover (4)	1.434	4.894	1	0.027	4.197	1.178	14.957
Annual turnover (5)	1.942	9.094	1	0.003	6.969	1.973	24.616
Full time employees	0.040	14.444	1	0.000	1.041	1.019	1.062
Constant	-2.531	15.801	1	0.000	0.080		

Variable(s) entered on step 1: annual turnover, number of full time employees.

#### 6.4.5 HEALTH AND SAFETY POSTERS

Use of health and safety posters was also predicted by turnover and number of full time employees with  $\chi^2=91.88$ ,  $df=6$ ,  $N=422$ , and  $p<0.001$ . The model accounted for 27% (Nagelkerke pseudo  $R^2=27$ ) of the total variance. The overall prediction success rate is 72.0% and 53.9% correct predictions of use of health and safety posters and 88.3% for those that do not use health and safety posters. Table 6.15 gives the regression coefficients (B), the Wald statistics, significance level, odds ratio [Exp(B)] and 95% confidence interval (CI) for odd ratios (OR) for each predictor.



Table 6.15 Results of logistic regression of health and safety posters

Step 1 Variables	B	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
						Lower	Upper
Annual turnover		38.841	5	0.000			
Annual turnover (1)	15.919	.000	1	1.000	8196134.473	0.000	.
Annual turnover (2)	2.343	3.712	1	0.054	10.417	.960	113.002
Annual turnover (3)	1.941	13.773	1	0.000	6.967	2.499	19.421
Annual turnover (4)	0.229	0.219	1	0.640	1.257	0.482	3.280
Annual turnover (5)	0.218	0.204	1	0.652	1.244	0.482	3.212
Full time employees	0.034	10.430	1	0.001	1.034	1.013	1.056
Constant	-1.392	8.954	1	0.003	0.249		

Variable(s) entered on step 1: annual turnover, number of full time employees.

#### 6.4.6 HEALTH AND SAFETY REWARDS

Annual turnover, number of full time employees, and type of construction business were found to predict health and safety reward. The results indicated that the three-predictor model provided a statistically significant improvement over the constant-only model ( $\chi^2=130.64$ ,  $df=7$ ,  $N=422$ ,  $p<0.001$ ). The Nagelkerke pseudo  $R^2$  indicated that the model accounted for 37% of the total variance. This suggests that the set of predictors discriminated between businesses instituting health and safety rewards for safe behaviour and those that did not. The overall prediction success rate was 73.3% and correct prediction rates of 70.8% for those instituting health and safety rewards and 75.3% for those that did not. Table 6.16 presents the summary results for the regression coefficients (B), the Wald statistics, significance level, odds ratio [Exp(B)] and 95% confidence interval (CI) for odd ratios (OR) for each of the predictors. The Wald test reported that the three organisational variables (annual turnover, number of full time employees, and type of business) are statistically significant predictors of businesses instituting health and safety rewards for safe behaviour. The type of construction business (civil contractor or building contractor) has a strong

influence; civil contractors are 4.53 times (CI=2.72 - 7.56) more likely to institute health and safety rewards for safe behaviour on site than building contractors. For an increase in the number of full time employees by one, there is a 1.01 times likelihood of the business instituting health and safety rewards.

Table 6.16 Results of logistic regression of health and safety rewards

Step 1 Variables	B	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
						Lower	Upper
Annual turnover		31.070	5	0.000			
Annual turnover (1)	-26.509	0.000	1	0.999	0.000	0.000	.
Annual turnover (2)	2.442	4.493	1	0.034	11.500	1.202	110.008
Annual turnover (3)	2.452	12.892	1	0.000	11.614	3.046	44.293
Annual turnover (4)	1.351	4.152	1	0.042	3.860	1.053	14.150
Annual turnover (5)	0.780	1.378	1	0.240	2.181	0.593	8.022
Full time employees	0.033	9.675	1	0.002	1.033	1.012	1.055
Type	1.511	33.451	1	0.000	4.529	2.715	7.557
Constant	-2.630	16.467	1	0.000	0.072		

Variable(s) entered on step 1: annual turnover in (2005), number of full time employees, and type of construction business.

#### 6.4.7 DOCUMENTATION OF METHOD STATEMENTS

Annual turnover and type of construction business predicted whether a business documented method statements. This model also provided a statistically significant improvement over the constant only model ( $\chi^2=146.29$ ,  $df=6$ ,  $N=422$ ,  $p<0.001$ ). The Nagelkerke pseudo  $R^2$  accounted for 40.6% of the total variance. The independent variables therefore discriminated between businesses that documented their method statements and those that did not. The overall prediction success rate was 74.5% and correct prediction rates of 66.1% for businesses that documented method statements and 81.9% for those that did not. Table 6.17 gives the regression coefficients (B), the Wald statistics, the level of significance, odds ratio

[Exp(B)], and the 95% confidence intervals (C.I.). The Wald statistics indicated annual turnover and type of construction business to be statistically significant predictor of documentation of method statements. Civil engineering construction businesses were 3.26 times more likely to document their method statements than those in the building construction sector.

Table 6.17 Results of logistic regression of documentation of method statements

Step 1	B	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
						Lower	Upper
Annual turnover		82.277	5	0.000			
Annual turnover (1)	22.643	0.000	1	1.000	6820699.349	0.000	.
Annual turnover (2)	4.365	11.124	1	0.001	78.636	6.049	1022.286
Annual turnover (3)	3.779	23.152	1	0.000	43.792	9.393	204.174
Annual turnover (4)	2.183	8.119	1	0.004	8.875	1.977	39.847
Annual turnover (5)	0.957	1.528	1	0.216	2.603	0.571	11.870
Type of construction	1.187	20.256	1	0.000	3.279	1.955	5.498
Constant	-2.628	12.505	1	0.000	0.072		

Variable(s) entered on step 1: annual turnover, type of construction business.

#### 6.4.8 HEALTH AND SAFETY INDUCTIONS

Annual turnover, full time employees, and age of company were statistically significant predictors of health and safety inductions. The model provided a statistically significant improvement over the constant-only model ( $\chi^2=116.15$ ,  $df=7$ ,  $N=422$ ,  $p<0.001$ ). The Nagelkerke pseudo  $R^2$  accounted for 33% of the total variance. The set of predictors therefore discriminated between businesses conducting health and safety inductions and those that did not. The overall prediction success rate for the model is 70.3% and correct predictions rates of 68.5% for businesses, which conducted health and safety inductions, and 72.3% for those, that did not. Table 6.18 gives the regression coefficients, the Wald statistic, significance level, odds ratios [Exp(B)], and confidence interval (C.I.). Age has a greater

influence on whether a business conducted health and safety inductions or not than the number of full time employees. For an increase in the age of a business by one year there is a 1.08 times likelihood of the business conducting health and safety inductions compared with a likelihood of 1.05 times for a unit increase in the number of employees.

Table 6.18 Results of logistic regression of health and safety inductions

Step 1	B	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
						Lower	Upper
Annual turnover		16.317	5	0.006			
Annual turnover (1)	11.720	0.000	1	1.000	123048.017	0.000	.
Annual turnover (2)	2.538	3.280	1	0.070	12.652	0.812	197.249
Annual turnover (3)	1.754	8.112	1	0.004	5.775	1.728	19.303
Annual turnover (4)	0.698	1.384	1	0.239	2.010	0.628	6.435
Annual turnover (5)	0.771	1.728	1	0.189	2.162	0.685	6.823
Full time employees	0.047	13.481	1	0.000	1.048	1.022	1.074
Age company	0.074	20.991	1	0.000	1.077	1.043	1.112
Constant	-3.186	25.840	1	0.000	0.041		

Variable(s) entered on step 1: annual turnover, full time employees, and age of company.

## 6.5 CHALLENGES TO HEALTH AND SAFETY MANAGEMENT

### 6.5.1 CONSTRAINTS

In addition, respondents were asked what they thought were the main difficulties they faced in the management of health and safety. As well as being a form of a measure of attitude of respondents which change over time, this was potentially useful information regarding key issues in health and safety management. A large proportion of the respondents (67%) indicated that they experience some form of difficulties that hinder the effective management of health and safety. Respondents' answers are described in the sections which follow.

### **Low level literacy**

The respondents indicated the majority of site operatives on their sites were illiterate. They needed training on health and safety which addressed the specific needs of such workers. Illiterate workers were often difficult to convince about many health and safety issues partly because of language barriers between them and their immediate supervisors. What was often important to illiterate workers is the pay they earn for working on site, any other issues relating to conditions of employment was considered secondary by them. One respondent stated thus:

“Many of the site workers are illiterates and as such there are problems in communicating effectively what is required of them on site. Since most of them can neither read nor write and may only speak their tribal language it becomes difficult training them” (Respondent No. 342)

### **Lack of adequate resources to manage health and safety**

Owner/managers were faced with how to allocate the meagre resources they had to fulfil business functions. Limited financial and human resources were stated as factors that impacted negatively on health and safety. It was difficult getting loans from financial institutions from banks because it was difficult to meet the criteria for loans.

### **Access to health and safety information**

Access to health and safety resources was a problem. The factory inspectorate was considered to be poorly resourced. Other departments responsible for health and safety were also noted by the respondents to be severely constrained making it difficult for them to have access to health and safety information.

“Many managing directors of SMEs do not know where to turn to for support on health and safety. One will only be fortunate to employ a site supervisor who is competent and health and safety conscious. Health and safety professionals are very few in this country” (Respondent No. 98).

### **Reliance on imported health and safety equipment and materials**

The right types of personal protective equipment have to be imported into the country because they are not available locally. These, including imported building materials are in short supply because of foreign exchange constraints. SMEs, in truth, many of them, often resorted to buying substandard health and safety equipment and poor quality materials which

contributed to health and safety problems on sites. As one respondent of this questionnaire item frankly stated:

“Health and safety equipment are simply not available in the local market, we simply rely on substitutes which often are not suitable for our environment; therefore contributing to health and safety problems on sites” (Respondent No. 119).

### **Cost of health and safety**

The benefits that result from good health and safety cannot come about without investing in health and safety. Seventeen (17) respondents stated the cost of investing in health and safety measures to be a problem, especially that health and safety items must be priced realistically, if good health and safety is to result. However, many SMEs indicated their fear of not winning contractors because they might end up as the losers if they price realistically.

### **Attitudes of employees**

Twenty-eight (28) respondents indicated the attitudes of employees to health and safety to be cause of concern. Workers were seen as careless and having bad habits such as substance abuse and believes which predisposed them to site accidents.

### **Contracts**

Nine (9) respondents stated that conditions contract relating to health and safety aspects of projects were sometimes not clear. This therefore, sometimes resulted in payment disputes on health and safety.

### **Lack of continuity of jobs**

Six (6) owner/managers stated lack of jobs as a factor that compelled them to rely heavily on casual labour and labour only subcontractors which they thought did not promote the effective management of health and safety. Casual labour is not covered by the Social Security and National Insurance Trust. Labour only subcontractors' workers may find it difficult adapting to main contractors' working procedures.

### **Physical environment**

Certain times of the year were noted to be extremely hot and this encourages workers on site to work without wearing personal protective equipment. Controlling workers' attitudes during such periods can therefore be difficult at these times of the year. Thunderstorms are common between the months of June and August and measures had to be taken to safeguard workers health and safety. One respondent wrote:

“The weather at times is extremely hot making it difficult for workers to use protective clothing given to them. Sometimes the weather can be unpredictable and workers' health or safety becomes a problem”  
(Respondent No. 276).

### **6.5.2 SUGGESTIONS FOR IMPROVING HEALTH AND SAFETY AT CONSTRUCTION SITES**

Over half of the respondents (61%) were willing to suggest ways to improve health and safety management and this, in itself, was an interesting result because it apparently highlighted the negative attitude of some owner/managers to health and safety and the shortcomings of government policy on health and safety. Many of the respondents professed to little being done by contractors to raise the profile of health and safety. Many of the suggestions bordered on a change of attitude of owner/managers to health and safety issues and government support to construction SMEs.

#### **Creating health and safety awareness**

Respondents suggested health and safety education aimed at creating awareness of the risks of hazards on construction sites among owner/managers and other project participants was necessary.

#### **Guidance on health and safety regulations affecting construction activities**

Most respondents also stated that the relevant health and safety regulations were not applied in construction because of lack of guidance on how to achieve the health and safety standards contained in them.

### **Helping contractors to manage health and safety**

Suggestions were made to the effect that, government as a client and health and safety exemplar should assist contractors offset the cost of implementing health and safety standards in the country. Some stated training as an example while others stated equipment loans.

### **Change of attitude to construction health and safety**

The businesses that made some suggestions also noted that there was a need for a change in attitude to health and safety in order for the profile of health and safety to be raised and construction sites made safer and healthier than prevails now.

### **Specific guidance on construction health and safety**

Respondents stated the need for specific guidance on the management of construction health and safety risks. Presently, health, safety and welfare on construction site are covered by occupational health and safety law, labour laws and environmental laws of the country.

## **6.6 SUMMARY**

This chapter has presented the results of the exploratory interviews of key persons within the health and safety institutional structure and survey. The chapter presented results based on the data gathered, of the capacity of the institutions responsible for health and safety to effect the implementation of minimum health and safety standards on construction sites. The weaknesses of the institutions were also examined from the evidence provided by field data. The results of a survey administered to construction SMEs in four regions are also presented which gave a picture of health and safety management by SMEs; what the common health and safety practices are, how these relate to their characteristics and what challenges they face.

The chapter reported on the results of the first and second stages of data collection. These results constitute one part of a whole in terms of the results of the study. The results inform the methods used in collecting and generating the other part of the results which is reported in the next chapter.



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## **7 CHAPTER SEVEN: RESULTS OF THE STUDY: OWNER/MANAGERS PERCEPTIONS OF HEALTH AND SAFETY MANAGEMENT**

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### **7.1 INTRODUCTION**

Owner/managers play a dominant role in SMEs being responsible for many business functions within SMEs. The central role owner/managers play in SMEs means their perceptions and beliefs about health and safety is the key to understanding how health and safety is managed within the sector. This chapter presents the results of the final part of the data collected primarily through semi-structured interviews with owner/managers to complement survey data presented in the preceding chapter. Site observations and documentary sources on health and safety management are reported alongside.

Results of the characteristics of the participating SMEs are first presented followed by owner/managers' views on organisational arrangements they put in place for the management of health and safety within the SMEs. Respondents' level of 'commitment' typified by health and safety procedures they have in place at the company level for ensuring health and safety standards are maintained on sites are described as well as evidence provided by other data sources. This section is followed by another on respondents' views of health and safety procedures they put in place for controlling health and safety risks at project sites. Reasons as to why the respondents took or failed to take certain measures to ensure their sites are safe and free of health hazards are reported. An assessment of the adequacy of the health and safety measures taken in light of prevailing hazards on sites is reported. The section also presents alongside, the results of site observations of workplace relationships among site workers and work processes/procedures.

These sections are followed by two sections; one reporting the results of cultural values and how these relate to owner/managers' beliefs about site health and safety and, the other on owner/managers viewpoint on the shortcomings of health and safety management within SMEs in Ghana. The aspects the interviews covered included: the profile of the businesses; arrangements, if any, respondents had in place for managing health and safety; site

procedures for controlling the risks of hazards; influence of the environment (culture, economy, policies and other institutions) on their operations vis-à-vis health and safety; and, constraints to health and safety management.

## **7.2 PROFILE OF THE SMES**

### **7.2.1 THE BUSINESSES**

The organisational characteristics of the businesses that participated in this interview survey are summarised in Table 7.1. The medium-sized businesses carried out more civil engineering projects than the micro and small businesses and occasionally, carried out building construction projects of larger magnitudes than those executed by the micro businesses and small businesses. The small businesses and micro businesses mainly carried out building construction, renovation, refurbishment works, and associated civil engineering works. The owner/managers of the micro businesses said they obtained jobs through competitive bidding of Government of Ghana (GOG) projects and through negotiations with private clients they had previously worked for and developed some level of trust. The values of the projects, which they tendered for, were generally small compared to the projects carried out by the small or medium-sized businesses. All the businesses employed casual labour on their sites, which often exceeded the number of full time site staff.

Formal human resources management procedures were lacking in all the micro businesses that participated in the interviews while all the medium sized businesses had some form of formal approaches to human resource practices such as recruitment and staff training in place. All but two of the small businesses had formal human resource management procedures within their businesses. Business strategies of the firms interviewed where they existed were in most cases not documented and only directors of the companies knew of such plans. The time line of such plans did not extend beyond 10 years except in one case where the period for a strategic plan formulated was 15 years. There is an indication of lack of documentation of management structures of the SMEs except for SMEs in the medium size category.

Table 7.1 Organisational characteristics of the SMEs

SME	Age of SME (yrs)	Workforce size	Turnover (000000'¢)	SME size band	Location
SMEs with health and safety procedures					
A	12	7	600	Micro	Northern Region
B	10	8	700	Micro	Upper East Region
C	15	9	1000	Micro	Ashanti Region
D		6	800	Micro	Ashanti Region
E	5	7	400	Micro	Gt. Accra Region
F	7	7	500	Micro	Gt. Accra Region
G	26	12	700	Small	Northern Region
H	21	15	1000	Small	Upper East Region
I	19	23	2000	Small	Upper East Region
J	27	29	5000000	Small	Ashanti Region
K	30	13	1000	Small	Gt. Accra Region
L	26	14	20000	Small	Gt. Accra Region
M	32	31	15000000	Medium	Northern Region
N	36	137	50000000	Medium	Northern Region
O	31	167	500000	Medium	Ashanti Region
P	37	182	600000	Medium	Ashanti Region
Q	25	37	10000000	Medium	Upper East Region
SMEs with no health and safety procedures					
R	11	7	550	Micro	Upper East Region
S	15	9	1000	Micro	Ashanti Region
T	5	7	400	Micro	Gt. Accra Region
U	29	15	1000	Small	Northern Region
V	15	11	100-500	Small	Upper East Region
W	25	14	1000	Small	Gt. Accra Region
X	15	55	500-1000	Medium	Northern Region
Y	30	161	450000	Medium	Ashanti Region
Z	23	76	1000-50000	Medium	Gt. Accra Region

### **7.2.2 OWNER/MANAGERS' PROFILE**

The ages of the owner/managers ranged from 29 to 68 years and number of years of experience ranged 6 to 37 years. The educational background of the owner/managers varied from no academic qualification to a Master's degree. One of the owner/managers who was not literate entrusted a literate family member with the responsibility to oversee many of the business operations. The owner/managers had a variety of reasons for establishing construction businesses, which may be categorised under the following four headings and described in the section which follows:

- seeking of business opportunities;
- expansion of business activities;
- seeking independence in working life; and,
- professional owner/managers.

#### **Seeking of business opportunities**

These owner/managers established construction businesses with the hope of getting work in the near future and constituted 19 per cent of the respondents in the interviews. Such owner/managers were previously in employment or operating some different business. For these owner/managers, the chances of winning contracts improved when any family members, friends, and political allies were in positions of authority capable of influencing decisions made by tender boards. These owner/managers had talents to organise factors of production with the assistance of close relatives to carry out projects awarded to them. Relatives who were part financiers of a project also benefited financially when the project was successfully completed.

#### **Expansion of business activities**

These were owner/managers who viewed the construction sector as one in which entry offered them opportunities for earning higher profits than other businesses to provide for the their livelihood and family upkeep. Thirty-nine per cent of the respondents belonged to this group. These owner/managers possessed very little knowledge of construction and some were illiterate. This group of owner/managers had established other businesses; enabling them to gain some experience in managing a business before they established a construction business.

Before establishing construction business, some of these owner/managers were building material dealers and had accumulated some savings, which formed the start-up capital for the construction business. In some cases, a family member offered support in kind or cash or both towards the establishment of the construction business.

### **Seeking independence in working life**

These owner/managers were employees of public or private construction firms or some construction related businesses but later decided to establish their own construction businesses because of preference for independence and autonomy in working life. Twenty-three per cent of the owner/managers were of this category.

### **Professional owner/managers**

These are owner/managers who have obtained relevant qualifications, which placed them in a more advantageous position to be able to start and manage their own businesses. These owner/managers constituted 19 per cent of the total respondents in the interview survey. At the higher end, the owner/managers may be holders of business diplomas and degrees or engineering related degrees and diplomas. At the lower end, such owner/managers may be building artisans with National Vocational Training qualifications, City and Guilds Intermediate and Advanced qualifications, or Construction Technician Certificate (CTC) holders. The majority of the owner/managers interviewed belonged to this category.

## **7.3 ORGANISATIONAL ARRANGEMENTS FOR IMPLEMENTING HEALTH AND SAFETY**

This section presents the results of corporate health and safety procedures of the SMEs interviewed. Generally, evidence of documentation of health and safety procedures of the businesses was scanty and often, where it existed, health and safety responsibilities were not indicated. Owner/managers who had no procedures for dealing with health and safety argued that that they relied solely on contract provisions on health and safety. These owner/managers were apparently ignorant of their legal obligation to ensure their construction sites are satisfactorily safe and healthy as can be observed from a comment made by one of them:

“The only health and safety rules we try to comply with are those contained in the conditions of contract. If the conditions say provide for items x, y and z to ensure the health and safety of your workers on site, then, that is what we have got to ensure” (V).

### **7.3.1 HEALTH AND SAFETY POLICY**

It is explicit in the Factories, Offices, and Shops Act 1970 that workplaces should be made safe for employees working there. However, the Act does not make explicit the requirement for construction businesses to have health and safety policies. However, increasingly demands by some public and private sector clients for improved health and safety standards have compelled some construction businesses (large and small) to have health and safety policies. Typical clients which require contractors to have health and safety policy are the mining companies and tertiary educational institutions. One owner/manager explained the importance of health and safety policies when asked how he incorporates health and safety in his response to tenders:

“Many mining companies in Ghana insist that contractors tendering submit a health and safety policy and procedures they have in place for ensuring construction site health and safety. Provisions are made for the costs of these in the tender documents. Also, the country’s universities require contractors to have a health and safety policy before registering them” (H).

Another owner/manager stressed on the influence clients exert on health and safety management thus:

“Construction site health and safety is influenced by clients who are committed to high health and standards beyond the stipulations of the health and safety laws of Ghana. There are exemplary clients who would evaluate contractors based on their health and safety procedures and practices and ensure that the necessary arrangements for project health and safety are in place before work commences on site. Health and safety training, safety meetings, safety officers who ensure standards are some of the traditions in these client organisations” (L).

Eight out of the 17 SMEs said they had company health and safety policies but only three made their policies available to the researcher. The content of health and safety policies averaged one and half pages in length and contained the responsibilities of the employer and employees. However, all the policies lacked detailed specifications of arrangements for managing health and safety risks on construction sites. The SMEs usually developed their

health and safety policies as part of tender requirements or contractors' registration process with client organisations. Observations at project sites of SMEs with health and safety policies indicated health and safety was not accorded the level of attention that their health and safety policies seemed to convey. For instance, on one such site, the workers were not given induction training and were also dissatisfied with the management's attitude to health and safety. This observation, therefore accords with the fact that most SMEs only developed health and safety policies as part of a tender requirement without actually ever putting into practice such policies.

Some SMEs, particularly those obtaining work as subcontractors under international construction businesses, conformed to health and safety standards of the main contractor. Working as subcontractors under international firms often required an SME to have a health and safety policy. The policies did not reflect the health and safety procedures found on the construction sites managed by them as main contractors. Health and safety policies are gaining currency in construction SMEs largely as a result of external influence and not as a matter of genuine commitment to comply with health and safety laws or to achieve high and safety performance on construction sites. This external pressure to manage health and safety was summed up by one owner/manager as follows:

“Clients are demanding a lot from contractors currently and there is pressure from some NGOs. In order to be getting jobs, a contractor must manage his operations, including health and safety, properly. There is competition due the presence of many Chinese and other international construction businesses so there is nothing we can do. We have to face the competition or be phased out” (F).

### **7.3.2 HEALTH AND SAFETY STRUCTURE/RESPONSIBILITY OF THE SMES**

The small and micro businesses with health and safety procedures had informal health and safety structures for implementing health and safety measures on their sites. The owner/managers in these businesses assumed responsibility for health and safety and delegated some aspects of health and safety responsibilities to key administrative and site personnel. Owner/managers were responsible for purchasing health and safety logistics and related expenditure. They relied on their site supervisors or managers for communication to workers on many issues bordering on health and safety. This worked well where the site

supervisor or manager had worked with the owner/manager for many years and had built some level of trust. The site supervisors or managers were responsible for inductions, accident investigations, accident reporting and implementation of health and safety measures on site. Site foremen and employees had responsibilities to report any unsafe situations to the site supervisors or managers. One owner/manager had this to say about the health and safety structure of his organisation:

“As the manager, I am responsible for the safety, health, and welfare of my employees and other persons who visit our construction sites. I do all the purchases for any materials and equipment for ensuring health and safety. I delegate site health and safety to my site manager and he is expected to take measures to ensure the site is safe. The site manager carries out the technical aspects of health and safety management at the site level; he organises induction training for the site workers at frequent intervals and orientation for new workers” (J).

Owner/managers of SMEs which had not put in place similar health and safety measures on the other hand were the sole persons responsible for ensuring health and safety provisions in contracts were complied with and did not delegate such responsibility to any of their workers. However, their site supervisors could inform the owner/manager of any health and safety requirements of the contract not complied with and which consultants were likely to query. Six of these businesses hired the services of site managers and/or foremen to supervise their sites. These site managers and foremen negotiated with owner/managers for a lump sum for the services they provided. Problems often ensued, particularly when the owner/manager failed to pay promptly.

The medium-sized SMEs which had health and safety procedures had a relatively complex health and safety structure. The owner/managers delegated some health and safety responsibilities to personnel managers who liaised with site management on health and safety issues such as provision of personnel protective equipment, accident reporting and investigation forms, arrangements for health and safety inductions, and health education. The owner/managers in these companies gave final approval of decisions reached on health and safety issues between site management and administration. The owner/manager of one such medium-sized business commented on the business safety structure thus:

“Our personnel division liaises with site management to draw up a health and safety plan for every contract, which they forward to this office for approval. It is the duty of site management to ensure that we are



operating according to the health and safety provisions in the contract documents and other health and safety regulations especially the Labour Act and Factories, Offices, and Shops Act” (P).

This may be contrasted with the similar comments made by one small business owner/manager:

“As the managing director I am responsible for my workers health and safety, I provide funds for the purchase of health and safety items for the sites. The site manager oversees that the workers comply with our safety procedures and report any accidents or dangers on site to me” (B).

Examples of two typical organisational structures of the SMEs are shown in Figures 7.1 and 7.2 below.

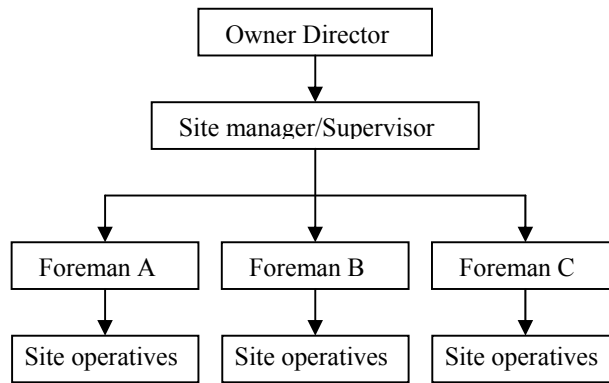


Figure 7.1 Sample organisational structure of a small SME (B)

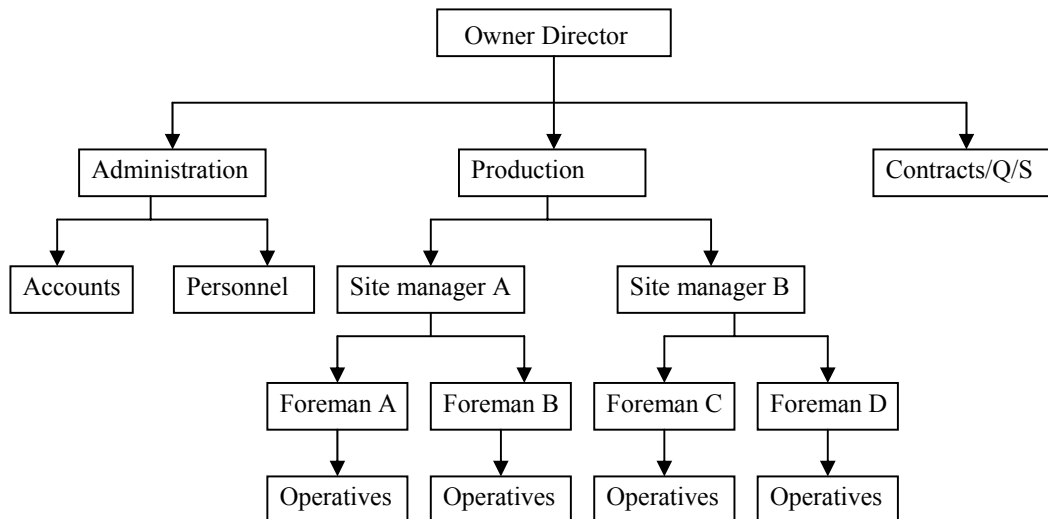


Figure 7.2 Organisational structure of a medium-sized business (P)

One interviewee indicated that he assigned some health and safety responsibilities to key operatives on site as indicated by the owner/manager's response below. This, he explained was adopted after a serious accident occurred on one of his sites:

"I have to ensure there are no delays or shortage of site staff because of accidents or illnesses so I try to put in place the necessary measures on my construction sites to ensure the sites are safe. I maintain a clean site; making sure the workers behaviour on site conforms to our health and safety regulations. I report any accidents that occur on site. We have carpentry and masonry headmen and I have asked them to ensure that workers pay heed to safe working methods because they know my concern for health and safety. They would report any worker not paying heed to their advice and management would withdraw their services"

(A).

### **7.3.3 INSURANCE**

Construction workers suffer from poor health due to exposure to hazards on construction sites and it is highly likely that a construction worker who goes on retirement will not be able to do any further work for a living, especially if the work is physically tasking. Insurance cushions the worker against old age, invalidity and death. However, not all construction workers contribute to an insurance scheme under the Ghanaian Social Security Law (1991). There is no requirement in Ghanaian law for insurance coverage for workplace accidents affecting workers. The Workmen's Compensation Law (1987) imposes employer liability and a mechanism for determining the extent of liability. It does not set requirements for employer financing of potential liability. This has resulted in many contracts where the construction businesses do not insure the workers against accidents. In such instances, contractors try to compensate the victims through negotiation with them and/or their relatives. Where such negotiations fail, injured persons seek compensation under the Workmen's Compensation Law (1987) through its implementing institution—the Labour Department. However, standard contracts using the FIDIC conditions of contract expressly require the contractor to insure the workers against accidents.

Opinions of owner/managers of the two groups of SMEs did not differ much. Both sets regarded all risk policy as a burden on SMEs. An owner/manager who had put in place health and safety measures complained thus:

“For most projects nowadays, they insist on the contractor executing an “all risk” policy. It is an obligation that every contractor tries to meet and consultants insist on contractors submitting it before they process their mobilisation advance. When there is an accident, the insurers will come in to support. Before executing the policy, insurance companies insist that you are specific on the number of people you employ on your site. But in doing so, a contractor will end up paying very huge premiums. From experience, we try to keep accidents at the barest minimum so, normally, we do not go for the claims and yet we keep on paying because it is an obligation from the client. So, normally, we are not specific and rather limit our employee numbers to a few persons” (D).

This may be contrasted with another from an owner/manager whose business had no health and safety procedures in place:

“Insurance against workers involved in accidents on site is a one condition that a contractor has to comply with. Unfortunately insurance companies do not take into consideration whether a company has a good health and safety record or not” (X).

The National Health Insurance Scheme recently adopted in Ghana is to help individuals to pay for medical bills in the event that they or their spouses or children become ill. It serves as insurance against paying the full cost of consulting fees and treatment. Irrespective of whether contract provisions provide for the employees to be covered by the scheme or not, owner/managers were of the view that every contractor ought to ensure that his or her employees were members of the scheme, since this could help reduce the cost of treatment if a worker were injured. One owner/manager commented on the scheme as follows:

“It is essential that, as a contractor, one makes sure all his workers register under the National Health Insurance Scheme, which the government recently introduced. If a worker is registered under the scheme, and is involved in a construction site accident then the national insurance card is used in going for treatment and the cost is less than if the person were not to be registered under the scheme” (S).

#### **7.4 SITE PROCEDURES FOR IMPLEMENTING HEALTH AND SAFETY STANDARDS ON SITES**

Health and safety procedures implemented to control health and safety risks on sites were found to vary from site to site. Owner/managers generally made an attempt at adopting health and safety measures on sites to maintain a satisfactory safe and healthy environment although such measures could not guarantee the minimum standards in the Factories, Offices and Shops Act. It appears fear of loss of image play a significant role in the implementation of

measures to control hazards on site as can be inferred from the remark made by one owner/manager:

“.....A manager who knows what s/he is about will not allow accidents to occur on site; the business is the mark of ones social standing and if accidents are allowed to happen, that image is harmed” (Contractor M).

In contracts where provisions are not made for health and safety some owner/managers will implement health and safety measures as one of them aptly put it, they transfer health and safety measures adopted on projects sites where clients were more willing to pay for good health and safety to other sites where contracts did not make provision for such items or the relevant contract clauses were unclear:

“There are many projects where there are no provisions in the contract for basic health, safety and welfare items even though it is evident that they ought to be included in the contract clauses. All a contractor can do is to carry over to the new site, health and safety measures and provisions on past sites where adequate provisions were made for health and safety” (Contractor P).

In this sense, experience gained in contracts where adequate provisions are made for health and safety aids owner/managers decisions on the implementation of health and safety measures on construction sites where health and safety is excluded in the contract clauses of the project bills of quantities.

The above quote appears to be a good will gesture extended to workers on sites where contract provisions on health and safety are relaxed even though it is a legal obligation on their part to do so. This is not an indication of awareness of responsibilities under health and safety law by owner/managers, but rather a concern experienced owner/managers can have for the health and safety of their site operatives; nurtured, most probably, by lessons learned over the years of operating their businesses. Whilst some inexperienced owner/managers can have similar genuine concern for the health and safety of their workers and indeed some of them may take measures that demonstrate that concern, they may be found wanting in the measures they adopt to protect their workers' health and safety.

Observations on project sites indicated that basic health and safety procedures such as provision of first aid, personal protective equipment, latrines, accident reporting, accident

records, cloakrooms, and drinking were not implemented to the letter on some sites. However, at some other sites these health and safety procedures were stringently adhered to. The sections that follow present the views of owner/managers on practical health and safety procedures adopted on project sites of SMEs and results of the observation of work processes on project sites.

#### **7.4.1 IDENTIFICATION OF HAZARDS ON SITES**

Responses of owner/managers indicated that the SMEs particularly, those that had put in place health and safety procedures also carried out some form of hazard identification. This was done by site supervisors and often documented in personal diaries instead of site diaries. The most common practice, but which was informal, was the identification of hazards upon the first visit to the project site by managers or supervisors following the award of the contract. The hazards identified included natural hazards and other hazards associated with major operations on site. The level of importance and detail of the hazard identification process varied with the type of project and level of experience of the site managers or supervisors. Natural hazards considered included; reptiles, mosquitoes, bees, history of endemic diseases (for instance typhoid, guinea worm, hookworm, buruli ulcer, and cholera) of the locality where construction was to take place, hygiene of the sites and the prevailing weather conditions. A site manager explained how he managed the health and safety aspects of projects:

“Before starting work on site, I visit the site to see what health and safety precautions we need to take and I note these in my diary. Natural hazards such as stings from bees, snakebites, if they are common, then the site must be thoroughly tidy. The distance of the site from the nearest clinic is noted and major site operations and associated dangers are noted. We ensure our sites are tidy, conduct regular site-specific health and safety orientation on the sites and measures to enable us handle accidents and injuries should they occur” (G).

Examples of hazards associated with major operations frequently identified on sites in the order in which they are frequently encountered on sites include:

- working at height;
- stability of the structure being constructed or demolished;

- dust arising from site operations;
- site transport;
- materials;
- noise;
- fire; and
- dangerous substances.

One site owner/manager explained the methods of controlling the risks of hazards implemented on his site below:

“At the initial stages before starting work, I assessed the hazards on the site and noted measures to minimise or eliminate those hazards. I also communicated this information verbally to employees. Apart from following the health and safety provisions of the contract, I implement basic measures on the sites to ensure health and safety is guaranteed on site. I give inductions to supplement health and safety education provided on most of the project sites by health personnel of the Ministry of Health. From experience, I prepare a list of major hazards linked to some of the site operations, measures to minimise or eliminate them are communicated to the site foremen, and any comments they have are taken into consideration. We listen to our workers as well; for instance, on one of the sites the workers came up and said ‘master, at this time of the year the weather is too hot and we need the CSM (Cerebrospinal meningitis) injections’. I brought in health personnel to vaccinate them against it” (M).

The SMEs which had not implemented health and safety procedures generally thought that the hazards on their project sites were quite insignificant to warrant careful consideration.

One of them explained as follows:

“I expect that, where work is very hazardous, the contractor should plan adequately. The works we undertake do not involve working at upper floors and the projects are pretty simple ones; the hazards are not so serious” (T).

#### **7.4.2 HEALTH AND SAFETY COMMUNICATION**

The owner/managers of the micro businesses and small ones maintained shorter channels of communication which facilitated discussions on health and safety issues with site operatives at the start of projects. The discussions afforded workers the opportunity to know the level of importance given to health and safety by management. From the management point of view such meetings instilled discipline and awareness of hazards on the sites. One owner/manager explained the practice thus:

“In truth, we do not have a health and safety policy guiding health and safety management, although we are coming to terms with that as a shortcoming because some clients demand for it. Essentially, what we normally do on our various sites is to discuss health and safety with our site operatives by stressing on things we see as hazards on the site and reminding them from time to time. We also try to inculcate safe behaviour into our workers by telling of serious accidents that actually happened to their colleagues and our desire to prevent such happenings. For instance, when we moved to this particular site, we informed our workers of accidents that had occurred on other contractors’ sites. In one case an operative fell over starter bars of columns at foundation level which pierced through the ribs of the victim. Since the occurrence of that incident, we have repeatedly informed our workers that, if we are able to have an accident-free period every worker will be entitled to a bonus” (O).

Communication was informal as documentation in every form linked to health and safety management was an issue not adequately addressed by most of the SMEs. This is evident from the responses of the interviewees when asked about what they will do if an accident occurred on their site:

“In fact, we do not keep accident records at our sites although we do report serious accidents to the Factories Inspectorate Department. The medical expenses are borne by the company and the injured person paid some amount for the days that he or she will be off duty. For instance, one of our employees got hurt while cleaning the drum of one of our concrete mixers. Incidentally, it wasn’t his fault because he wasn’t the operator; he only opted to clean the machine. We paid him normal rate for all the days he was absent from the work due to the injury he sustained” (K).

### **7.4.3 HEALTH AND SAFETY EDUCATION AND TRAINING**

This study has shown that the breadth and depth of construction health and safety in curricula of tertiary institutions is generally not adequate—students learn only those aspects of health and safety highlighted in textbooks and practice manuals. Important aspects such as health and safety planning, monitoring, and health and safety practices within the context of developing countries are yet to be available to students in these countries. One owner/manager commented on the situation:

“Construction is dynamic; introduction of new technology means we need to change our approach to safety on site. Unfortunately, upgrading courses in the Universities, Polytechnics, and Technical institutions to reflect new methods and new hazards is a problem. Graduates are barely equipped to handle health and safety problems on sites and finding guidance information on health and safety is difficult. Apart from

ensuring that course contents reflect health and safety problems on site, educational institutions could organise courses on construction health and safety” (G).

Health and safety training is provided by the Ghana Employers Association (GEA) and the Ghana Institute of Management and Public Administration. Organisations interested in participating in training programmes pay the fees. None of the owner/managers interviewed had participated in any of these training programmes. A Vocational Skills Training Project (VSP) launched in 2000 by the Ministry of Education (MOE) and administered by Technical Institutes and Polytechnics in the country is a training scheme for artisans employed in the construction and manufacturing sectors. The objective was to enhance the competency of artisans and tradesmen in the construction and manufacturing sectors. The project was funded by World Bank and its sustenance is subject to Government commitment to the scheme. Other international organisations have also assisted in building the capacity of SMEs in the construction sector. Few SMEs in the construction sector have so far benefited from such training schemes.

Training should enhance the competence of owner managers and their staff to increase their productivity, including health and safety performance. The design of training programmes by these organisations takes into account all training requirements of staff at different levels in the SMEs:

- the management of business operations by owner/managers;
- improving the practical knowledge and skills of site staff of SMEs;
- introduction of workplace health and safety programmes in SMEs; and,
- support SMEs to initiate networking with organisations.

Professional bodies like the Ghana Institution of Surveyors and Ghana Institute of Engineers, in conjunction with international consulting organisations also organise training seminars for owner/managers and their staff. However, the costs of these training workshops are a limiting factor to SME participation and the contractors associations are therefore looking for alternative ways of training the staff of their members. In line with the difficulties in training staff, The Association of Road Contractors Ghana (ASROC) planned to provide continuous education for its members. Appendix E gives training courses designed for SMEs operating



in the building and road sector in 2006. These training courses organised by the contractors associations hold a promising future for sustaining training of construction SMEs if there is consultation with all stakeholders in construction health and safety. Time is a crucial constraint to construction SMEs as many of them would not be willing to devote time for training, especially on the site. One of the interviewees complained about site training thus:

“As you know in construction, we work to tight schedules to meet deadlines and even sometimes have to work overtime and in the night. Taking off some time to train staff on the site can be a difficult thing. It is when the consultants in conjunction with the client have taken into consideration the time allowed for training of contractors’ staff that it will be possible. Otherwise, contractors will conduct 5-10 minutes health and safety orientations, which are likely to have little impact” (U).

Health education by personnel of the National Health Service is a popular form of training among SMEs. The owner/managers of the two categories of SMEs indicated their workers had benefited from health education on sites of projects they executed in the past. Health education by the National Health Service is free and all health units at regional or district levels provide the service. Public contracts where, up to 50 workers will be on site, require the main contractor to arrange for personnel of the Ghana Health Service to give health education. Topics covered during such talks included HIV/AIDS, site hygiene, and safe behaviour.

#### **7.4.4 EMERGENCY PROCEDURES ON SITE**

First aid and transport to convey the injured to a clinic or hospital were normal emergency preparations on site provided for on most sites. Investments beyond these were thought to be more appropriate for complex and large projects and were often thought to form part of future growth strategy as noted by one owner/manager:

“We always put in place the necessary welfare facilities, first aid kit, drinking water and a means to quickly transport injured persons to the nearest hospital or clinic whenever necessary. We are thinking about complex projects in the future, and if necessary, to employ a senior nurse on site, arrange with a medical doctor and other measures. If we have more staff and the site is very complex then we have to invest more into health and safety. Not that our capacity to manage health and safety is limited, but the truth is, what is the point employing a nurse on site for just two workmen?” (Z).

The contents of first aid boxes on some of the sites lacked some basic first aid items (Table 7.2). There appeared to be no standard set for the contents of first aid box and many owner/managers only bought the required items when the consultants supervising the project insisted.

Table 7.2 Contents of first aid boxes at sites

Site	Antiseptic cream	Bandages	Cotton wool	Gauze	Plasters	Bowl	Iodine	Scissors	Scissors
1	√	√	√	√	√	X	X	√	√
2	X	X	X	X	X	X	X	X	X
3	X	X	X	X	X	X	X	X	X
4	√	√	√	√	√	√	√	√	√
5	X	X	X	X	√	X	X	√	X
6	√	X	X	√	X	X	X	X	X
7	√	√	X	X	√	X	√	√	X
8	X	X	X	X	X	X	√	√	X
9	X	√	√	X	√	X	√	√	X
10	√	√	√	√	√	X	√	√	X
11	√	√	√	√	√	X	√	√	√

Key √= item is provided X= item is not provided

#### 7.4.5 HEALTH AND SAFETY RECORD KEEPING AND ACCIDENT REPORTING

The companies which had arrangements for controlling health and safety risks, had in place some form of documentation on their accidents. Accident investigations and reporting are mostly the responsibility of site managers or supervisors. Documentation of minor incidents was often overlooked. Site managers recorded accidents in site diaries and reported to owner/managers or senior management in writing or through telephone calls depending on the severity of the case. Hospital forms were in some cases available and given to employees who complained of illness or who were injured in the course of site operations. These procedures were necessary; they provided the businesses with a means of measuring health

and safety performance and a way of complying with the Workmen's Compensation Law.

One owner/manager explained below:

"We keep records of our accidents and we investigate every accident. They are necessary to serve as a reminder of how well we are doing in terms of health and safety. We also investigate the accidents to find out the true cause of the accidents and to take action to prevent future happenings. For instance, one of our workers fell from a scaffold and got badly injured and, when the accident was investigated, it was found out that the erection of the scaffold was not done properly. So, from that time onwards, we have always ensured strict supervision during erection of scaffolding" (I).

Negotiation between owner/manager and injured employees appears to be preferred to compensation payment through the appropriate government departments by owner/managers as can be seen from one such owner/managers comment:

"At one of our sites, one injured worker wanted compensation but we had to talk to the boy to understand the situation because we had not gotten money allocated for that. So, we only took care of his hospital bills and paid him 1.5 times his normal earnings" (Contractor S).

On the other hand, companies which had no arrangements in place for dealing with health and safety risk and merely complied with contract conditions on health and safety, did not document accidents. The owner/managers of these companies had misconceived the health and safety risk level of their sites because accidents rarely occurred on their sites. One of the owner/managers had this to say:

"We have not experienced serious accidents on our sites before except minor ones, which do not require the victim taking some time off, and so we really have not recorded such accidents or seriously investigated them. We should perhaps consider this area in view of legal implications of accidents" (R).

Another owner/manager explained it this way:

"Scarcely do serious accidents happen on our sites just as in many small construction businesses which carry out small works. They carry out simple projects where the risk of hazards is lower than say complex multi-storey projects. If the work is hazardous then the contractor will have to prepare for it but where there are only little health and safety problems a contractor may not adopt any measures to control the risks. For instance, it is easy to get a first aid box than have the means to transport injured persons on sites to the nearest clinic. We are thinking about undertaking complex projects in the future where it might be necessary to employ a senior nurse on site and other measures. If we have more staff and the site is complex, then we have to employ the necessary measures to ensure accidents on site do not happen" (Contractor T).

Owner/managers performed many functions in their organisations. The commercial and production functions took priority over others such as human resource functions, and particularly health and safety. One site supervisor attributed his inability to keep accident records on site to time:

“In fact, we do not keep records of accidents. I supervise the site operations and at the same time do some aspects of clerical work for the company such as accounting. I know I could be found wanting if I am asked to produce documentation of that nature but Factory Inspectors rarely visit our sites or ask of that requirement. I think it is time to delegate some functions to some other personnel. Employing permanent office staff is a difficult issue because one must be able to have a turnover to justify it. Unfortunately, getting jobs is a real problem considering the huge number of contractors who bid for a single project these days” (Z).

In some cases site managers’ or site supervisors’ competency to keep records relating to health and safety on construction site was questionable. Some site managers or site supervisors rose to the position by virtue of their experience. Poor writing skills therefore can be a genuine reason why some site managers did not keep records on health and safety.

#### **7.4.6 HEALTH AND SAFETY FACILITIES PROVIDED ON SITE**

The provision of health, safety and welfare facilities on site is covered by contract clauses for most building and civil engineering contracts. Although facilities such as site toilets, urinals, drinking water, cloakrooms, offices, and personal protective equipment may be provided for in contracts, on site, they may not be adequately provided. Although, owner/managers of the group of SMEs without health and safety procedures said they provided all the above facilities on their sites, observations of their sites proved that some of them had erred.

Work processes on sites often undermine health and safety and on very small sites health and safety procedures may even be overlooked. For instance, a plank may be used as a substitute for a ladder (Picture 7.1). Scaffolding used on site was often poorly constructed suggesting the low skill levels that characterised some of the sites. Toe boards were observed to be absent from some scaffolding used by painters and plasterers (Picture 7.2).



Picture 7.1 A plank used as a ladder to access roof



Picture 7.2 Insecure scaffolding used by plasterers

Owner/managers who had put in place procedures for controlling health and safety risks provided their workers with personal protective equipment. SMEs which had no such procedures in place and only adhered to health and safety provisions in contracts either provided insufficient quantities or did not provide any PPE to their workers on site (Pictures

7.3 and 7.4). The PPE provided by owner/managers to the workers in some cases was of poor quality.



Picture 7.3 Site where PPE were not provided



Picture 7.4 Workers working at a site where PPE were not provided

The hottest period in Ghana is from the months of March to May where temperatures above 40° C commonly occur in most parts of the country. Wearing safety boots, hard hats and face

masks at these times can be very uncomfortable (refer to Picture 7.5). One foreman explained his workers' attitudes when asked why some workers on site did not wear personal protective equipment:

“We do caution our workers to wear safety equipment which we give to them. When the weather is hot, as it is now, they will not wear hard hats and safety boots because they feel uncomfortable. I some times threaten them with a dismissal letter before they obey” (E).



Picture 7.5 Non-use of PPE by some workers

## 7.5 SIGNIFICANCE OF CULTURE IN HEALTH SAFETY MANAGEMENT

Responses by owner/managers and employees on health and safety issues in their organisations contained words and phrases which indicated the significance of the socio-cultural setting. For instance words and phrases such as; culture, adapting to culture, ill fate, traditions, destiny, and mystery run through language describing perceptions about health and safety and the occurrence of accidents on site. Prayers was often an activity which site workers devoted some time for and often, prayers for work to progress satisfactorily and without any problems can be said (Picture 7.6). Older and more experienced workers often showed a caring attitude towards their colleagues, especially younger workers. Some older workers gave advice to younger workers on other social and religious issues. One

owner/manager, in describing the health and safety management systems of a mining company, bluntly pointed to cultural considerations in health and safety:

“The best clients in Ghana are the mining companies. They are very strict and I must say it was a very good experience working for them. The way they handle health and safety problems is adapted to the culture of the people here and the situations here. There are many safety officers around and there are lots of training programmes for the workforce on site and a lot of people are there guiding and teaching the workforce. There are safety meetings every morning, which also allow for 5 minutes prayers by a native in native language or English. During safety meetings, we talk about work we are supposed to do first in terms of hazards during the day” (P).

In this instance, the owner/manager’s business was working as a subcontractor on a construction project for the mining company. The client had a health and safety system and ensured main contractors and subcontractors worked according to their systems.

Asked why owner/managers cannot form partnerships in order to benefit from a pool of resources, another owner described the cultural set up as one which hinders the formation of partnerships and joint ventures beyond the family and kinship level and cited examples of cases where such efforts were unsuccessful:

“The ambition of the individual and our cultural set up does not allow the sort of opening up for others to come in; it is not part of our culture. I don’t know whether it is partly because people cannot be trusted but I know of one or two companies which tried to do that and it has not ended well with them. They were doing well and then all of a sudden you hear that they are not doing well.....”(C).

The values, beliefs, and religion identifiable with the people influenced employer/employee relations. In describing how he manages health and safety in his business, an owner/manager re-iterated the social link between him and his employees:

“Health and safety provisions, apart from being contained in contract conditions, are part of the Labour Act and the Collective Agreement signed by our workers. The Factories, Offices, and Shops Act deals with construction health, safety, and welfare issues. We try as much as possible to comply with these laws. However, I must say that as a Ghanaian, you know these people are my sons and daughters and their security, in terms of their health and safety, must be of concern to me so whether it is provided for in a contract or not, it is by our traditions, my responsibility” (V).

Workers’ description of their involvement in accidents or near misses attest to their belief in some supernatural intervention which saved them from death or more severe injury than that



which was sustained. This being the case, their perceptions about the causes of accidents often absolved the normal causes of accidents such as unsafe acts and unsafe situations as observed from a site manager's description of an accident here:

"I remember once I got myself involved in an accident. It was like my ill fate that day but luck was on my side. I slipped, lost my balance, and fell over a roof parapet wall into a galvanised steel water tank filled with water. Some passer-by saw the accident and came to my rescue. In fact, it was a mysterious slip as the roof was not wet and I was wearing my boots and helmet too" (Q).

Asked what he thought the causes were, he replied in a terse statement followed by a wave of his forefinger in the air signifying the causes are beyond human explanations:

"Hum, look, it just happened, I still can't imagine what might have been the cause" (Q).



Picture 7.6 Christian workers at a site getting ready for morning devotional prayers

## **7.6 GENERAL CONSTRAINTS TO HEALTH AND SAFETY MANAGEMENT**

When asked if they faced problems in the management of health and safety, many of the owner/managers answered in the affirmative. The constraints to managing health and safety explained by interviewees may be categorised into nine factors presented in the following sections.

### 7.6.1 COMPETITION

Construction businesses compete for jobs provided by public and private sector clients. The public sector accounts for over 60 per cent of the total demand for construction. Government Ministries, Departments, and Agencies (MDAs) allocate money for the construction of new projects and continuing projects. They normally award contracts through competitive bidding with the successful bidder being the one with the lowest tender figure. The main reason for the adoption and continuous use of this type of procurement is that MDAs must be seen to be impartial in the expenditure of public funds. The central government also adopts the same method of awarding large contracts. Competitive tendering, together with the practice of awarding contracts to the lowest bidders, results in fierce competition heightened by the large number of construction businesses in the country. Government laws on contractors' registration are very lax and many persons wishing to start a construction business can easily do so. There are therefore many construction businesses chasing fewer jobs resulting in many of them adopting various means to outbid their competitors. Invariably many construction businesses will underbid in an attempt to win a contract and when awarded the contract they would avoid spending on health and safety items and to take advantage of variations to make huge claims. Where these do not work in their favour then they may abandon the project or, at best, late completion of the project results. One owner/manager commented on the situation thus:

“Because of competition and the practice of awarding the contract to the lowest bidder, one can price preliminaries in a realistic manner taking into consideration the hazards of the project and another will price the same project very low, disregarding health and safety. In the award of the contract, the lowest bidder gets the project and the contractor who prices in a realistic manner, loses. Many contractors are always willing to bid very low in order to get a job. Such contractors cannot put in place the necessary procedures for preventing accidents and illnesses on site. Not until the arena of competition excludes health and safety and provisional sums provided in the contract to cater for it, health and safety will always be poor on most sites because of little investment in preventive and control measures” (H).

Another owner lamented on the issue of health and safety and the behaviour of construction businesses and put it this way:

“.....Jobs are hard to come by nowadays because the government has relaxed the requirements for registering as a contractor so we have those who call themselves contractors but who do not know anything about the construction business registered. They are into the business because they have money and they

pay their way through sometimes to get jobs. It makes job seeking very difficult and many genuine contractors therefore tend to under bid at times to get a job to keep the workforce busy. Health and safety suffers under these circumstances” (K).

### **7.6.2 LIMITED RESOURCES**

Many contractors were constrained by limited financial resources which affected investment in health and safety preventive measures such as personal protective equipment, human resources and administrative resources needed to effectively combat site accidents and ill health. It is not surprising that many Ghanaian contractors operate without a working capital; they would use profits earned in another business run by the same owner/manager to run the construction business when necessary. High interest rates and delayed payments particularly in public projects result in construction businesses having little money to invest in health and safety measures. An owner commented on the situation thus:

“We are not able to provide all the necessary protective clothing and to take adequate measures to ensure our sites are safe because of limited finance. For instance, we investigated an accident which occurred on one of our sites and found out that it is much safer to use metal scaffolding instead of timber scaffolding because we have a problem getting skilled carpenters who will construct timber scaffolding to the required standard of workmanship. Therefore, we have been using metal scaffolds. They cost more so we are unable to buy enough to replace the timber scaffolding” (M).

The health and safety provisions specified in contract documents were sometimes not met by construction businesses because they lacked adequate financial resources to pre-finance health and safety. SMEs, constrained by limited finance, may tend to hope that contract clauses on health and safety are not specific and detailed so that they can avoid, as much as possible, spending on health and safety. One owner/manager’s remark about his experience as a contractor supports this:

“Raising working capital is difficult. First of all, not all projects are profitable. I have to plan and invest the little money I have in a way that it yields timely returns or else I am out business” (Contractor W).

### **7.6.3 CONTRACTS**

Implementation of health and safety standards is sometimes a problem because contract clauses on health and safety most often do not promote the implementation of health and

safety standards on construction. Contractors, at times, are not certain of payments for measures they put in place for controlling health and safety risks. Many contractors were of the opinion that providing provisional sums in contracts to cover health and safety is a sure means of ensuring contractors complied with health and safety standards. The wording of contract clauses on health and safety were sometimes not clear and this provided grounds for construction businesses to flout health and safety law. One owner/manager commented on the practice as follows:

“The situation is sometimes such that where you are going to work you will need lot of health and safety measures but the consultants may not make adequate provisions in the contract to cover all expenditure on health and safety. For instance, on one site, we had to lay pipes over 1 kilometre in order to bring piped water to the site because there was an outbreak of cholera in the area. We could not claim all the cost of it under the contract. When the issue was discussed with the consultants they were happy about the measures we took, but they refused to pay on grounds that our pricing of the health and safety items should have covered all costs in connection with health, safety, and welfare. Some contracts such as the ..... do not even have provisions on health and safety in the preliminaries section of the bills of quantities. Health and safety provisions in contracts need to be exhaustive and detailed” (M).

Clients who emphasised health and safety, ensured specific health and safety requirements are included in contracts. Examples of clients and organisations at the forefront of health and safety promotion included DFID, IDA, DANIDA, mining companies, and public universities in Ghana. Projects involving these organisations in Ghana required tenderers to submit method statements specifying arrangements they will put in place for controlling health and safety risk on site. The contract conditions of the projects included specific clauses on health and safety, where compliance means the construction business will have done enough to meet minimum standards stated in the Factories, Offices, and Shops Act, 1970 and section XV of Labour Act, 2003. Small projects funded by Government of Ghana do not include clauses on health and safety. There are no threshold project sizes stated in all the laws governing health and safety on construction sites and this leads many consultants being silent on health and safety on many projects. A regional president of ASROC explained the situations as follows:

“For small government projects, normally there are no provisions for health and safety and as such, the management of health and safety becomes a problem. We provide only the basic items needed for the health and safety of workers which we can afford” (Y).

#### **7.6.4 LITERACY LEVEL**

Many contractors and their employees have not received formal education and this makes interpretation of contract documents and health and safety law difficult. The result is a lack of understanding on many issues bordering on the health and safety of workers. Training such workers to create awareness of the main hazards on construction sites is necessary. Usual methods of education using health and safety posters have to take into consideration the literacy level of the workers. A site manager interviewed complained of the attitudes and awareness of health and safety hazards of such workers:

“You see, some workers are illiterates and they think what you are telling them is lies or wrong; even some of them at times come to the site under the influence of alcohol or drugs to work which is wrong. If a colleague worker should tell another worker to pick a nail on site, he will reply by saying you should have picked the nail on the road while coming to work. He thinks it is a waste of time. They need constant education and counselling on the site” (D).

#### **7.6.5 ATTITUDES OF WORKERS TO HEALTH AND SAFETY**

Individual characteristics of workers were seen to be a major problem in the management of health and safety. The habits frequently cited were alcohol consumption and smoking of hemp (cannabis). One owner/manager commented on the attitudes of his workers to health and safety as follows:

“Some construction workers, as you know, like drinking. Some are drunkards and before they come to the sites they may even be drunk. We try to talk to them by asking them not to take substance that will affect their output. In some cases we have had to suspend or dismiss such workers” (S).

Another owner/manager explained workers attitudes to health and safety as follows:

“Some workers behave irresponsibly; they take alcohol and banned substances” (O).

Some workers were seen to be more concerned with salaries in their collective agreement and not health and safety. Another owner/manager attested to the mentality of workers about health and safety:

“Our worker’s union signs a collective agreement with our association and the agreement consists of salaries, working conditions and health, safety, and welfare of workers. However, our major concern is salaries, once the workers agree on the salaries the other areas are not of much concern to them” (W).

#### **7.6.6 POOR IMPLEMENTATION OF GOVERNMENT POLICIES**

Interviewees' responses to the question of how government policies influence the management of health and safety indicated varied opinion among the SMEs both with and without health and safety procedures. Government initiatives aimed at increased productivity of the construction sector have failed to incorporate mechanisms to ensure improved working conditions including health and safety. Many contractors pay their workers rates only slightly higher than the minimum daily wage of 19,000.00 Ghanaian cedis (approximately 1GBP).

One owner/manager commented on the issue thus:

“.....there are nice polices such as the recent National Health Insurance Scheme which I think every contractor should embrace but the problem in this country is practical implementation of policies. The impact of the Governments' Private Sector Investment Programme on the construction industry as whole would be significant if such policies could be implemented to the letter. Ghanaian contractors need to be competitive and this means owner/managers must be able to manage their operations including health and safety efficiently.....” (L).

Another owner/manager commented on government policy as follows:

“Economic liberalisation policy pursued by governments has led to intense competition for jobs which Ghanaian SMEs are ill-equipped in terms of resources and technology. The foreign firms are technologically advantaged and can manage health and safety better. However, it is a gradual process and Ghanaian SMEs must improve upon their management of projects in order not to be forced out of the market.....” (C).

Government assistance in the form of credit schemes for SMEs is acknowledged by owner/managers to be of little benefit as the construction sector is capital intensive. However, government assistance in the form of loans to buy equipment which some SMEs in the road sector benefited is seen to enable contractors to expand capacity. One owner/manager commented on government assistance as follows:

“While government is doing the best it can to assist local contractors to build capacity, the sheer numbers of construction businesses and the different skills required by owner/managers makes it difficult to meet the needs of many SMEs in the sector. Contractors Associations such as the Association of Road Contractors of Ghana in conjunction with other international bodies develop training programmes for its members. Equipment is key area that government can be of assistance to contractors” (N).

With the government being the major purchaser of construction products and regulator of the industry, it is surprising that little effort seemed to have been made at ensuring construction

sites were safe and free of health hazards. The health and safety standards in some contracts compromise the health and safety standards in the Factories, Offices, and Shops Act, 1970 and the Labour Act, 2003 because of limits of budgets for physical development. One owner manager emphatically puts it this way:

“You see it even comes from the award of contracts. There are certain contracts in which adequate provisions are not made for health and safety and worse of all there are those in which no provision is made for health and safety at all. So, if government could ensure that in all its contracts there are standard clauses on health and safety to cover such items as site hygiene, toilets, first aid kit, protective clothing, potable drinking water, condoms, health education by health personnel, I think it will alleviate some of the health and safety problems workers face on site” (A).

Enforcement of, and compliance with, occupational health and safety standards were very lax. Staff trained specifically in occupational health and safety were also very few, with only 4 occupational health physicians, one occupational health nurse and 34 factory inspectors in the public sector in the year 2005. The necessary logistics needed to facilitate the work of staff of these departments are not sufficient or nonexistent. One owner/manager commented on the situation thus:

“I must say the country is evolving and recent health and safety issues addressed included disabled access to buildings and pedestrian and cycle lanes when constructing urban roads. We will progress as a nation if there is enforcement of law to the letter in this country. Unfortunately, site visits to monitor compliance with the law are occasional” (F).

#### **7.6.7 COMPETENCE**

Construction involves complex site operations, which require persons with a combination of manual dexterity and intellectual ability for safe and successful completion of all site activities. Getting the right labour to match the right jobs can be a problem for construction SMEs. There is severe shortage of skilled labour in the construction industry in Ghana, worsening the SMEs position of attracting well-qualified staff such as competent tradesmen, site foremen, supervisors, and site managers. Many of these persons prefer being staff of international construction businesses with high reputation. It is worth noting that many construction SMEs in Ghana pay higher than the national minimum wage in order to attract staff. Despite this, the staff turnover in many SMEs is very high; up to 50 per cent.

Unfortunately, SMEs are unable to meet their own training needs and rely on the public educational institutions for skilled labour. “A skilled workforce is a safe workforce” and some of the owner/managers were apt at realising this when they explained some of the difficulties they faced regarding health and safety:

“We do face problems in getting skilled labour especially if one or two of our tradesmen are injured and we have to get a replacement temporarily. We end up employing workers who are not competent and their chances of being involved in an accident are therefore higher; we therefore devote some time to giving them apprenticeship training to upgrade them” (F)

Many owner/managers relied on the technical expertise of their children and close relations. Owner/managers plan training of family members by sponsoring one or two members of the family to do specialised courses leading to qualifications which enabled them to handle key positions in the business. These sponsored family members will later inherit the business. At retirement owner/manager will make sure that the successor is competent enough to manage the family business.

There is equally a shortage of health and safety professionals with training in occupational health and safety. Many SMEs, in carrying out work in locations far from the national capital, found that transport cost and accommodation expenses for bringing a health and safety professional to their site can be prohibitively high, even if the fees for providing training is affordable. One of the owner/managers lamented on the problem of qualified safety professionals:

“There are few safety professionals in this country and the workload they have will not permit them to do site visits or safety training. If one is fortunate to have a qualified site manager then he/she does the safety training with help of health personnel of the Ghana Health Service. Health education is free and there are qualified nurses in every district and even sub-district who can give health education. But safety officers are a problem; my region has no office of the Factory Inspectorate Department” (I).

Good leadership is necessary to ensure the efficient and effective management of construction site health and safety. It is not possible to gloss over examples of good leadership of health and safety demonstrated by some managers. Some of the qualities of these health and safety leaders are determination, a will to see health and safety improve, willing to work as a team to improve health and safety, and attributing good health and safety



to the cooperation and efforts of others. One site manager's determination to see health and safety improve led to his decision to resign from his job because other senior management frustrated his efforts. He recalled this experience when asked why there was disparity in health safety performances of SMEs:

"Often there is not a right person with drive to promote health and standards on sites. I joined my first company in Accra, the level of safety was very poor, and when I realised I could do nothing about it any longer, I left the company and joined this company. Here, health and safety is part of my work and is like that for every site manager in this company. No one wants to report to the directors that somebody died on site. I am happy the directors are concerned about the health and safety of site workers as well as the public here" (P).

Owner/managers who demonstrated good health and safety leadership delegated some of their organisational functions to other senior management leaving the core aspects of corporate management without worrying about losing control of the business operations. One owner/manager delegated the technical aspects of health and safety to his site manager leaving only the purchasing aspect of it, handled by him. The owner/manager in question got his first job with a public construction firm as a labourer and rose to the position of general foreman before resigning to establish his own construction business. He emphasised his determination to maintain health and safety standards when he recalled his experience as a worker in response to why there are disparities in the health and safety measures on construction sites:

"I see the differences in health and safety standard to be the level of appreciation and attention one gives to the problem. Years ago when I used to work with the Rural Housing Department, I was always the last person to leave the site. I used to spend some couple of hours on site making sure the holes were covered or clearly marked, the pieces of wood with nails lying about the site cleared, guard rails were secure. I identified hazards likely to be encountered the following day and decided on measures to take and so forth; I was determined and committed. I encourage workers to be safety conscious especially now that I am managing my own company. I delegate someone I think will do the same and I thank God first and secondly, my site manager; some consultants have really praised us for the health and safety measures we take on our sites" (E).

### **7.6.8 LEVEL OF POVERTY AND DEPENDENTS' EXPECTATIONS**

The national minimum wage is currently ₵19000.00 (2007)—a little over £1 per day. Casual workers are the worst paid in some districts of the country. Asked why temporary workers have a bad attitude towards health and safety, one site manager responded:

“I see it as the lack of jobs. You know, the workers feel they have suffered before getting the job or staying at home without a job is a bitter lesson; so, they are even afraid of asking of their rights. He or she is afraid to tell management that look, if I am not wearing a helmet I cannot go up this ladder because he may be sacked which may not be the case” (Y).

Negative attitudes of site workers to health and safety stemming from the prevailing socioeconomic conditions of Ghana were succinctly expressed by one respondent thus:

“Our worker’s union sign a collective agreement with our association and the agreement consists of salaries, working conditions and health, safety, and welfare of workers. However, our major concern is salaries, once the workers agree on the salaries the other areas are not of much concern to them” (Owner/manager W).

### **7.6.9 IGNORANCE**

Many SME owner/managers are ignorant of their obligations under the laws on health and safety. The skills and knowledge needed to start and efficiently manage a modern business, independent of the size and nature of business is a constraining factor for owner/managers who can neither read nor write. Although some of these owner/managers are seasoned businesspersons with business acumen, it has taken them a great effort for their businesses to survive in an industry sector where there is intense competition.

To overcome many difficulties encountered, some owner/managers delegate some of their responsibilities and entrust key aspects of business administration to a family member. Supervision of the works on site and clerical work is usually the responsibility of the family member who has some educational qualification(s). However, poor management of some business functions including health and safety do happen. Irrespective of the educational background, some owner/managers were ignorant of their obligations under the law. One owner/manager asserted that The Factories, Offices and Shops Act does not cover construction, contrary to section 57 of the Act:

“The Factories Act deals with factories and does not cover construction; we comply with the Labour Act as well as the EPA Act. We obtain labour certificate as proof that we are complying with the Labour Act. Environmental Officers often visit our sites so we make sure we do not flout the environmental regulations; if one cuts down a tree, then he plants another to replace it. In fact, it is one of the areas which the government regards seriously and we adhere to the health and safety aspects of it strictly” (U).

The Factory Inspectorate Department should not be blamed for owner/managers’ ignorance since it is severely constrained by lack of resources and logistics to create public awareness on health and safety law and its statutory functions. Owner/managers perceived the risk associated with their activities to be low because accidents were rare. Asked what problems they face in the management of health and safety, owner/managers’ responses indicated they had little difficulties managing health and safety simply because they thought the risks associated with their work were very low.

“In fact, because we have never had any major accident at all, added to the fact that the nature of works do not impose much serious hazards like as it happens on complex projects, we don’t have much problems managing health and safety. Actually, we are lucky over here because of the Moslem community and most of our workers are Moslems so they don’t drink” (S).

## **7.7 SUMMARY**

This chapter has presented the health and safety practices of SMEs at the corporate and site levels from the viewpoint of the owner/managers with some supporting evidence from observations of sites managed by them. Changing demand by clients and donor agencies for safer projects has an impact on the management of health and safety by SMEs. Thus, the need to insure against accidents and to demonstrate some commitment to the health and safety of their workers is seen, by owner/managers, as an aspect of business which they cannot ignore. Size of SMEs and owner/managers’ awareness of their responsibilities under health and safety law are factors which have a significant impact on health and safety management.

The chapter gives a description of health and safety measures adopted to control accidents on sites managed by SMEs as well as the challenges they face in doing so. Health and safety management is not divorced from culture, especially the family value system and religious needs. Workers are culturally inclined in their attitudes and these are brought to the sites they

work in. Owner/managers are faced with shortcomings, many of which relate to the political and socio-cultural environments of the national setting in which they operate. Yet, other shortcomings rests with owner/managers' failings to recognise that their activities pose severer health and risks than their viewpoint portrays. However, some owner/managers recognise that some work methods on project sites and the characteristics of their workforce pose significant health and safety concerns. The emerging themes from the results are given in Table 7.3. This chapter and the previous one, together form the mirror image of health and safety management within construction SMEs in the chosen context. The next chapter presents a discussion of these results and the emergent value judgements.

Table 7.3 Summary of themes emerging from the study

Topical issues	Emerging themes	Evidence
Site health and safety processes	Variability of approaches to health and safety	<ul style="list-style-type: none"> <li>• Quality of health and safety leadership</li> <li>• Health and safety roles within the SMEs</li> <li>• Client/financiers concern for health and safety</li> <li>• Characteristics of SMEs and the differences in measures adopted to mitigate health and safety risks</li> </ul>
External environment	Impact of government policy and the state of economy on the operations of construction SMEs	<ul style="list-style-type: none"> <li>• Inability of SMEs to expand market</li> <li>• Influence of economy on business operations (including health and safety) of SMEs</li> <li>• Inadequate support to SMEs</li> <li>• Standards of living reflected in workers' poor demand for health and safety</li> </ul>
	Lack of enabling institutional structure which enhances the achievement of high health and safety standards at workplaces including construction sites	<ul style="list-style-type: none"> <li>• Appropriateness of institutional structure responsible for occupational health and safety administration</li> <li>• Absence of health and safety institutions</li> <li>• Problems in coordinating the activities of the bodies responsible for health and safety</li> <li>• Existence of many institutions responsible for construction health and safety</li> <li>• Appropriate legal framework for implementing health and safety at construction sites</li> <li>• Relationships between SMEs and institutions responsible for implementing existing health and safety laws</li> </ul>
	Extent to which values, beliefs, societal norms reinforce or otherwise, owner/managers' perception/intentions on health and safety	<ul style="list-style-type: none"> <li>• Religiosity of health and safety</li> <li>• Workers' relationships with one another</li> <li>• Extended family system</li> <li>• Extended family environment of SMEs</li> <li>• Existence of close relationships within SMEs</li> <li>• Collectivistic style of life</li> </ul>
Internal and external environments of SMEs	Barriers to effectively managing health and safety risks	<ul style="list-style-type: none"> <li>• Benefits deriving from good health and safety</li> <li>• Government commitment to improving performance of the construction sector</li> <li>• Resources available to SMEs</li> <li>• State of the economy as an enabler of health and safety management within SMEs</li> </ul>

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## **8 CHAPTER EIGHT: GENERAL DISCUSSIONS OF RESULTS OF HEALTH AND SAFETY MANAGEMENT WITHIN GHANAIAN CONSTRUCTION SMES**

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### **8.1 INTRODUCTION**

This chapter presents detailed discussions of emerging themes from the results of the research presented in the preceding two chapters (chapters 5 and 6) in section 7.7. The first section of the chapter presents discussions on the political, economic and socio-cultural environments within which SMEs operate and the health and safety management implications thereof. The significance of the political economy as an enabler of health and safety management within SMEs is explored, then the demand for health and safety by clients and construction labour within the context of the political economy examined. The institutional capacity for the effective administration of health and safety within the construction sector with particular focus on SMEs is challenged as well as the appropriateness of the legal framework for implementing health and safety at construction sites. The socio-cultural setting within which construction SMEs operate is considered in the light of its relationship with health and safety of construction sites.

The second section presents discussions on four propositions derived from literature on the association between the organisational characteristics of the SMEs and health and safety management practices (refer to section 4.6).

The third section presents discussions on the health and safety management practices of the SMEs. The section considers the legal requirements for health and safety measures and the actual implementation of health and safety standards on sites with regard to the context of the construction industry culture of Ghana. An attempt is made at seeking a deeper understanding of the health and safety management practices of the SMEs as evidenced by the results of the study.

The fourth section discusses the barriers, internal and external, to effective health and safety management within Ghanaian construction SMEs. This section is followed by one that

discusses ways of overcoming barriers to effective health and safety management, making suggestions for improving health and safety performance of SMEs of the construction sector of Ghana.

## **8.2 THE ENVIRONMENT OF SMES**

The external environment of SMEs affects their survival and growth. The literature review has shown that the environment of SMEs is a turbulent one, contributing to the failure of most SMEs to manage the health and safety function effectively (literature section 3.2.3). The results of field studies corroborate evidence of a frustrating environment, leading to health and aspects being overlooked by Ghanaian SMEs. The results indicate that workers' health and safety behaviour is partly determined by the state of Ghana's economy (section 7.6.8). Also, the interviews conducted in the first phase of the research indicate that the occupational health and safety administrative system of the country has little impact on health and safety management within SMEs (section 6.2). The field studies also provide evidence of workplace environments within Ghanaian construction SMEs shaped by traditional religious values and extended family culture (7.5). These results are discussed in the sections that follow.

### **8.2.1 THE ECONOMY OF GHANA**

Ghana's economy typifies the state of socio-economic development in Sub-Saharan Africa; with a high population growth, low average income, high unemployment rate and reliant upon agricultural sector. Decades of market reforms aimed at securing economic growth has so far yielded minimal results considering the ultimate goal of such reforms is to transform Ghana into a middle income country. The state of the economy impacts on business operations, particularly SMEs and the social life of people within the country. In spite of the frequent rate of government policies aimed at creating an enabling environment in which SMEs can flourish, certain obstacles remain which hinder the growth of SMEs in the private sector. In light of the supporting evidence provided by the empirical data, it is therefore argued here that such obstacles have negative implications for health and safety management within construction SMEs in the country.

### **SME survival, growth and health and safety management**

The private sector of the economy of Ghana is dominated by SMEs. It is seen as the key to economic growth and it is therefore the target of market reforms under Ghana's Structural Adjustment Programme (SAP). The crux of reform initiatives has been to create an enabling business environment that will enhance the growth of the private sector and SMEs through interventions targeted at removing obstacles that the sector faces. The Ministry for Private Sector Development (MPSD), Ghana Investment Promotion Centre (GIPC) and National Board for Small Scale Industries (NBSSI) have been established as part of the Ghana government's private sector growth strategy. To date, as discussed in section 2.4.2, there appears to be no significant progress in this direction. It is clear that the trade liberalisation policy of the government have led to intense competition which SMEs face in Ghana (refer to literature on the national setting, section 2.4.3). The results provide some evidence that construction SMEs presently face similar competition which hinders the efficient management of their operations including health and safety. This evidence has been reported in section 7.6.6. There is additional evidence that SMEs are faced with lack of resources which affect the health and safety aspects of their operations (section 7.6.2).

The aforementioned results accord with the findings of studies on the construction industry of Ghana. For instance, Eyiah and Cook (2003) have attributed the failure of contractor assistance programmes to lack of human resources, inability to obtain contracts and delayed payments to contractors. The difficulties in accessing finance and other constraints which construction SMEs face affect the progress of construction works. Contractors will tend to speed up the pace of construction works when funds and other resources are available in order to be on schedule often, to the detriment of the quality of the finished facility and site health and safety. The effects of lack of resources are reflected in the use of old outmoded construction equipment and lack of a maintenance culture within contractors in Ghana (Adam 2005). All these reasons contribute to the dismal health and safety performance of construction SMEs in Ghana.

Corruption adds to the problems of construction SMEs and continues to have negative effects on business operations and on the creation of an enabling environment in which SMEs can



flourish. According to Kenny (2007), corruption in the construction industry of developing countries is a commonplace evil and a driving factor behind pressure to overspend on new construction rather than maintenance of the existing stock of infrastructure. A survey on corruption conducted in Ghana (CDD-Ghana 2000) indicated that 63% of unofficial payments by construction businesses in the country are made to officials of the Ministry of Roads Transport. Corruption leads to poor quality infrastructure, time and cost overruns in projects. Accidents can occur as a result of poor quality workmanship and use of substandard materials and components or worse still, as a result of bribing public officers to overlook poor working conditions on construction sites which they would normally enforce compliance with health and safety regulations. The corrupt attitude of public officers responsible for enforcing health and safety regulations is an encouragement for SMEs to overlook serious health and safety hazards on site without taking remedial measures.

### **Workers' demand for safe working conditions**

Literature findings suggest that there is a low level of concern for working conditions in the construction industry in developing countries and this, contributes to poor health and safety on construction sites (literature section 4.5.1). The results of the study reported in section 7.6.8 confirm that workers are unlikely to complain about working conditions so long as the wages they are entitled to are paid promptly. In Ghana, workers' wages/salaries are too low to meet the cost of their families' basic needs such as food, education and health. Like many developing countries, access to good health facilities is limited because of the limited availability of such health facilities in Ghana. The state of the economy is therefore reflected in the low socioeconomic status of workers. On these grounds, a considerable proportion of Ghanaian workers from the sense of occupational health and safety are vulnerable. Many site workers are happier with better wages earned under poor health and safety working conditions. Workers' demand for healthier and safer working environments is accordingly, low.

Casual and temporary workers are not covered under the state pension scheme (Social Security and National Insurance Trust (SSNIT)) partly because of the forgoing reasons and the administrative bureaucracy of the department and the temporary and hidden nature of

construction project sites. It is common to find such workers employed on construction sites without being registered with the CBMWU.

### **Clients concern for health and safety**

The general literature suggests developing countries are faced with limited resources which adversely affects the construction industry. For instance, Ahassan (2001) has pointed to lack of resources and research on workplace exposures as the major reasons for lack of effective implementation of policy, particularly relating to health and safety. Coble and Haupt (1999) have similarly, argued that the particularly precarious financial situation of most developing countries makes the construction sector vulnerable leading to negative consequences on health and safety management. The results of this study presented in section 7.6.6 show concerns expressed in the present study by owner/managers on poor implementation of government policies and government's lack of commitment to health and safety in projects in which it is the client. This finding is apparently consistent with the aforementioned literature.

The government in Ghana, like many developing countries and developed countries all over the world, is the largest client. However, the Ghanaian government has failed to play a lead exemplary role in maintaining good health and safety on projects sites which are funded by the government. The worse abuse of health, safety and welfare can be found on construction sites of government funded projects which can be traced to lack of effective implementation of policies relating to occupational health and safety. Many ILO conventions relating to workers' health, safety and welfare in the construction industry have been ratified by the Ghana Government but effective measures to actually implement them is lacking. Not surprisingly, projects funded by international donor agencies are executed under strict implementation of ILO labour standards. Small public project sites managed by construction SMEs do not benefit from good health and safety measures because contract provisions on health, safety and welfare on such projects are either inadequate or absent.

Whilst it is undeniable that some private clients of construction facilities in Ghana deserve commendation for the proactive management of construction site health and safety, the majority are ignorant of the central role they can play in preventing construction site

accidents. Many small private clients are more concerned about the cost and quality of their finished product and generally, are less concerned about the health and safety aspects of their projects as this is thought by them to be the contractor's responsibility. Ghana's development pattern is typical of SSA; experiencing a rapid growth of the informal construction sector while the volume of construction in the formal sector is gradually shrinking. This has serious health and safety implications because many construction SMEs operate in the informal sector and as Wells (2001) has rightly pointed out, failure to comply with regulations characterises the sector.

Figure 8.1 provides a graphic illustration of the interactions of aspects of the economic environment discussed in the preceding subsections with SMEs, leading to health and safety behaviour outcomes. This by no means represents a complete picture of the health and safety behaviour of SMEs as they are subject to other external and internal influences.

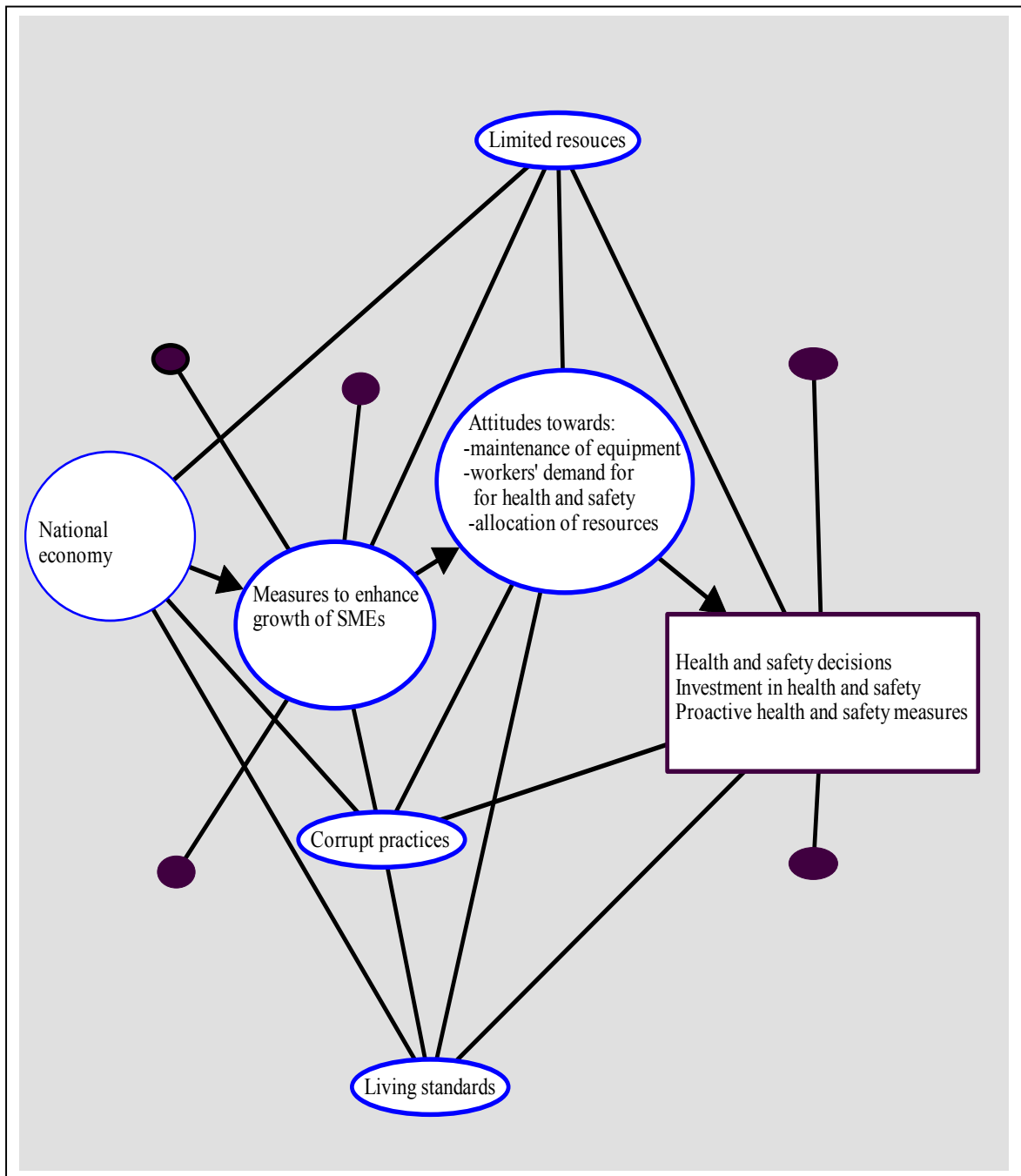


Figure 8.1 The economic environment as a determinant of health and safety behaviour

### **8.2.2 THE INSTITUTIONAL STRUCTURE FOR IMPLEMENTING HEALTH AND SAFETY LAW**

The literature points to ineffective institutional structures for implementing health and safety standards, low level of involvement of consultants and employers in health and safety issues in developing countries as the main contributory factors to poor health and safety performance of the construction sector (section 4.5.1). This is also true of Ghana as discussed in the literature section 4.2.2. The survey and interview data (sections 6.3.4, 7.4.6 and 7.6.9) corroborate evidence of poor compliance with health and safety laws by SMEs and ignorance of owner/managers of their responsibilities under health and safety law. Also, there is evidence which is consistent with the literature findings that the institutional structure for implementing health and safety laws, consultants, workers' unions and employers' associations exert little influence over health and safety issues affecting construction SMEs (sections 6.2.2 and 6.2.3).

The administration of health and safety requires an efficient and adequately resourced institutional structure for implementing health and safety standards at workplaces nationally. However, this is not the case in Ghana where there are many departments and agencies having responsibilities for occupational health and safety administration with overlapping roles. It is also a fact that different health and safety laws and regulations are administered by the different departments or agencies responsible for occupational health and safety. The many departments and agencies responsible for health and safety result in bureaucracy and an increase in corruption common in the construction industry. The institutional structure therefore does not facilitate ease of compliance with health and safety laws because of many procedures required under the slightly different health and safety regulations which different departments and agencies seek to implement. Indeed, many owner/managers are simply ignorant or confused as to which organisations to report accidents to and, about their responsibilities relating to health, safety and welfare laws. As the results of both the survey and the interviews demonstrate, very few SMEs report accidents to the Factory Inspectorate Department and some owner/managers are unaware of the existence of the department and their responsibilities under the main health and safety law. Tetteh (2003) has pointed to areas

of jurisdiction as the bone of contention between departments responsible for occupational health and safety and dissatisfaction amongst employers as a result of these issues in Ghana.

Coordinating the activities of the ministries, departments and agencies responsible for occupational health and safety is far from achievable as there is no law mandating any of the institutions with the responsibility to coordinate the activities of the rest. The non existence of a national policy on occupational health and safety adds to the problem of occupational health and safety management in the country. All the institutions lack adequate resources to effectively carry out their functions with the most severely constrained being the Factory Inspectorate Department with neither funding mechanisms nor logistical support (Kheni et al. 2007, Kheni et al. 2006). Figure 8.2 shows the how the institutional environment interfaces with construction SMEs and how health and safety is thereby affected.

Ghana's lack of capacity to manage occupational health and safety is evident from the lack of commitment to manage health and safety effectively among many owner/managers of construction SMEs. The absence of pressure brought to bear on contractors on construction sites means some scrupulous contractors can take advantage of lack of punitive deterrent measures to place economic gain above other business objectives, including health and safety. It is therefore common to find some owner/managers who would manage their businesses without bothering the least about health and safety issues. This unfortunate situation leads to lower motivation on the part of owner/managers to manage the health and safety aspects of the construction sites compared with when there is strict implementation of inspections and fines that are high enough to deter potential abusers of health and safety law. Research provides evidence to support this; that fines and other punitive measures for breaking health and safety law compels employers to proactively manage health and safety because of fear of being penalised or exposed (Wright 1998).

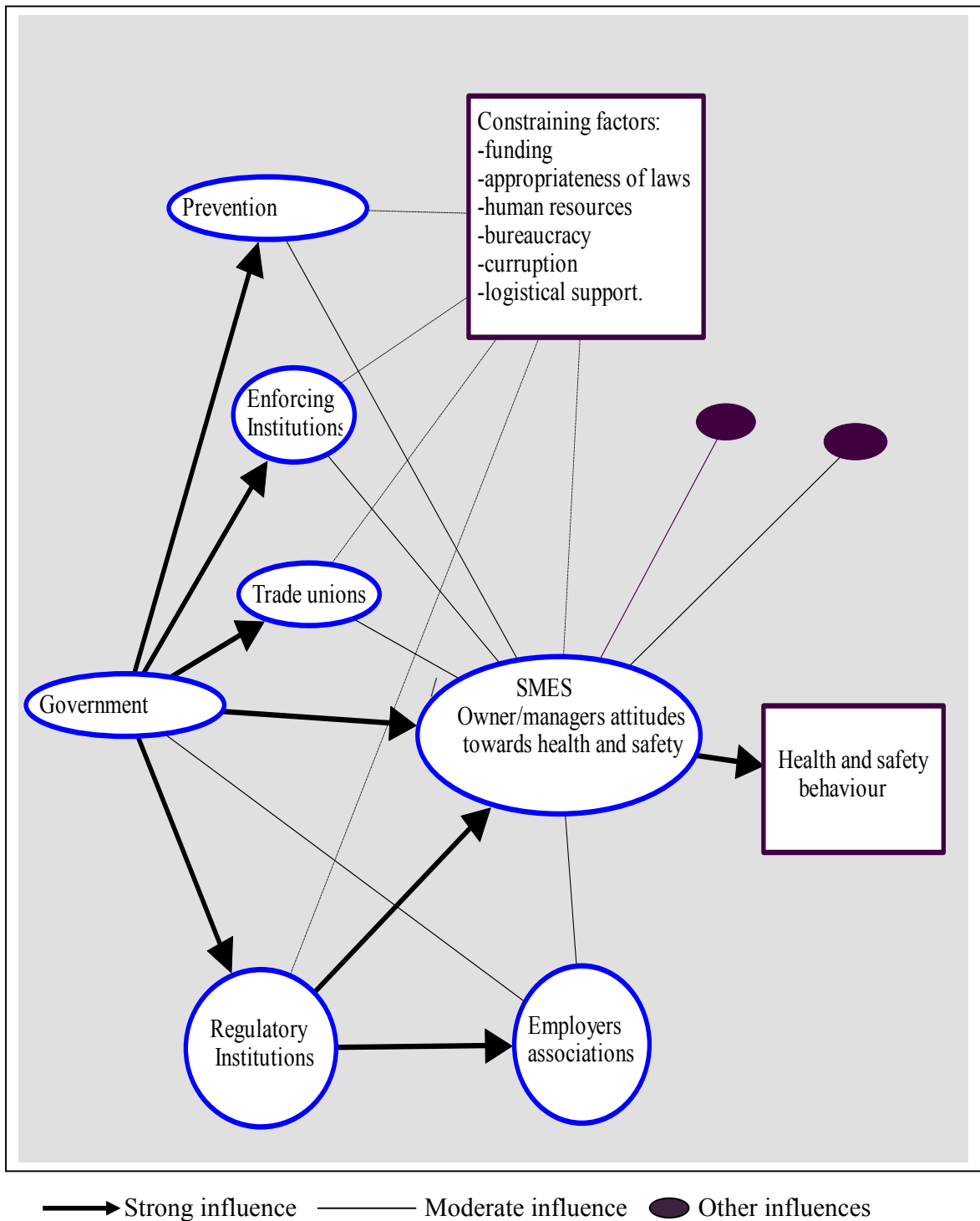


Figure 8.2 The Institutional environment as a determinant of health and safety behaviour

### **8.2.3 CULTURAL VALUES AND OCCUPATIONAL HEALTH AND SAFETY**

The literature discussions emphasise the importance of culture in health and safety management although the studies reported fail to specify the nature of the influence culture has on health and safety management (section 4.4.2). The results of the study provide evidence of culture as a strong shaping force of workplace relations (section 7.5). Values which have their origins in traditional religion and extended family system have, as the study's results suggest, significant influence on organisations and workers' attitudes to risks to their health and safety at workplaces. Owner/managers' perceptions of and attitudes to health and safety are bound together with the extended family system and a collectivist view of life characterised by providing for social needs including health and safety of workers. Religious practices for example, prayers, observance of holy times, and native customs are intertwined with workplace activities and underscore the value systems of the country. Values affect attitudes and behaviour and therefore present certain challenges to the management of health and safety within construction SMEs.

#### **Religion**

Religion according to Hofstede (2001:329) is “a way for human beings to influence the supernatural—to provide certainties beyond the unpredictable risks of human existence”. Birth, marriage, fertility and death are signpost in the life of human beings that are of significance in all religions and are marked by rites and protected by religious values. Construction workers bring along certain of their religious beliefs, practices and behaviours based on their religious predispositions, to the sites they work. This may seem natural since invariably, workers have to be accommodated on some sites and, therefore spend longer times on the site than at home. In this way, workers have to make some time for worship on the site. The results of the present study provide support of the evidence of religious practices on construction sites of the SMEs; prayers are said on construction sites, libation is poured on construction sites whose locations adjourn shrines and fasting. It can therefore be argued that religious values are of relevance to construction projects in Ghana. It is useful here to reiterate that, in spite of the apparent dominance of Christianity and Islam in many localities, traditional religion and particularly, its associated value systems are important. Traditional values are therefore, generally upheld by the average Ghanaian.



The dominance of traditional African religious values may be explained by, most importantly the chieftaincy institution of the country and extended family value systems which have tended to preserve traditional value systems linked to traditional African Religion. Chiefs are the custodians of native customs and values systems. The increasingly important role played by chiefs in the administration of justice, the practise of traditional and customary law and good governance at the local levels after independence, ensures the traditional values they seek to promote endures and are strongly adhered to in society. The extended family system is linked to traditional African region and its associated values. In traditional religious terms, the family is a sacred social unit which continuously receives God's blessings requested by elderly members of the extended family. Expansion of the extended family, the clan and lineage it belongs, signifies God's blessings upon that extended family. Traditional values are strongly guarded as they form the cohesive force behind the kinship and family ties.

Traditional African religious values discussed in the literature section 2.5 essentially, preach tender values; honesty, kindness, compassion, hard-work, responsibility and politeness. These tender values can be observed from the results of the study in section 7.5. Hofstede (2001:327-331) argues that religious values are linked to a masculine/feminine dimension (MAS), with those religions preaching tougher values maintaining a masculine stance and those which preach tender values a feminine. Based on the preceding accounts of the nature of the Ghanaian religious values and relating these to Hofstede's MAS, it can be summed up that the attitudes and behaviours of Ghanaians and for that matter Ghanaian construction workers, is feminine.

Older, more experienced workers on construction sites have been observed in the present study to show a caring and tactful attitude towards their colleagues especially, younger ones (these behaviours were noted in the study and reported in section 7.5). Thus, in a sense, Ghanaian religious values are benignly brought to bear on construction workers' behaviour and relationships with their colleagues on construction sites. Such attitudes are compatible with health and safety principles, as it is the duty of workers to take care of their own health and safety and those of others. These observations accord with findings of studies on the role of culture in health and safety management reported in the literature section 4.4.2.

The influence of religion on the various facets of the daily lives of people in a developing country such as Ghana is stronger by virtue of the stage of the country's development. This contrasts with the cultures of relatively developed nations where science and technology is profoundly linked with and exerts significant influence on social life. The overdependence on religion and desire to influence the natural cause of events seem to perpetuate other belief systems incompatible with values and teachings of traditional African religion, Christianity and Islam which exist alongside these religions in Ghana. In Ghana and many parts of SSA for instance, negative beliefs, such as witchcraft, and voodoo persist (Nukunya 1992:58). These negative belief systems moderate the positive influence religious values have on occupational health and safety management discussed in the preceding paragraphs. However, they are likely to die out in the course of time but presently, they are relevant to the research context.

### **Extended family environment**

The interview results corroborate evidence of extended family environments within the SMEs which participated in the study. It is common for employees to refer to the owner/manager as their father and be loyal in dealings with the business. An owner/manager may therefore be regarded as a counsellor, advisor as well as a leader in this sense; his ability to meet extended family obligations earns him respect and uplifts the image of the family. Thus, an extended family environment can be said to prevail within SMEs in this sense. Funeral rites, weddings, birth rites involving employees are often supported by the owner/manager either through cash donations or use of company resources such as vehicles.

In some other SMEs the extended family environment is absent and working relations between owner/manager and employees is different. In many of such SMEs, the owner/manager typically, hired a site manager/supervisor and foremen; misunderstandings are common and frequent changes in site managers or supervisors are also common. Workers present no problems in such SMEs because they are all casual workers (or better known in local parlance as 'by-day'). Whereas the relationships between workers in SMEs where an extended family environments prevail is close and cordial, in the other group of SMEs,

relationships between workers is less of a cordial and close nature. Some of the medium size SMEs with foreign directors and managers who were interviewed showed more formal working relationships than those which had no such directors and managers. An extended family environment was also absent in the former; a plausible explanation of this being the different cultural backgrounds of the management of such SMEs.

Employees of SMEs which maintained an extended family environment made suggestions on the businesses operations including health and safety and shared in problems which the businesses encountered. Apparently, trust in relationships and commitment to common goals was a feature of these SMEs. These, undoubtedly affected the management of health and safety since communicating on hazards to management was facilitated. Workers also tended to sympathise with managements' inability to address many health and safety issues and, in some SMEs, took steps within their means to protect themselves.

These observations accord with evidence of the harmonious working relations reported to exist in SMEs in some other settings (Kitching 2007, Scase and Goffee 1980:15). While extended family environments within Ghanaian construction SMEs could enhance health and safety communication and participation, the burden imposed by extended family obligations discussed in the literature section 2.5.2, can undermine effective health and safety management. Extended family problems are often, given priority over personal or business related problems. In allocating resources to business functions, therefore, the family and collective interests are often considered first. This can lead to some areas of management functions particularly, health and safety being deprived of its share of resources.

Figure 8.3 shows the interaction of religious values and practices, other cultural values and the SME. As the figure depicts, the attitudes to health and safety of owner/managers and employees of SMEs are shaped, to some extent by the cultural environment; primarily the traditional religious values and extended family values. Behaviours which have a positive impact and ones which have negative impact can be the outcome of such attitudes.

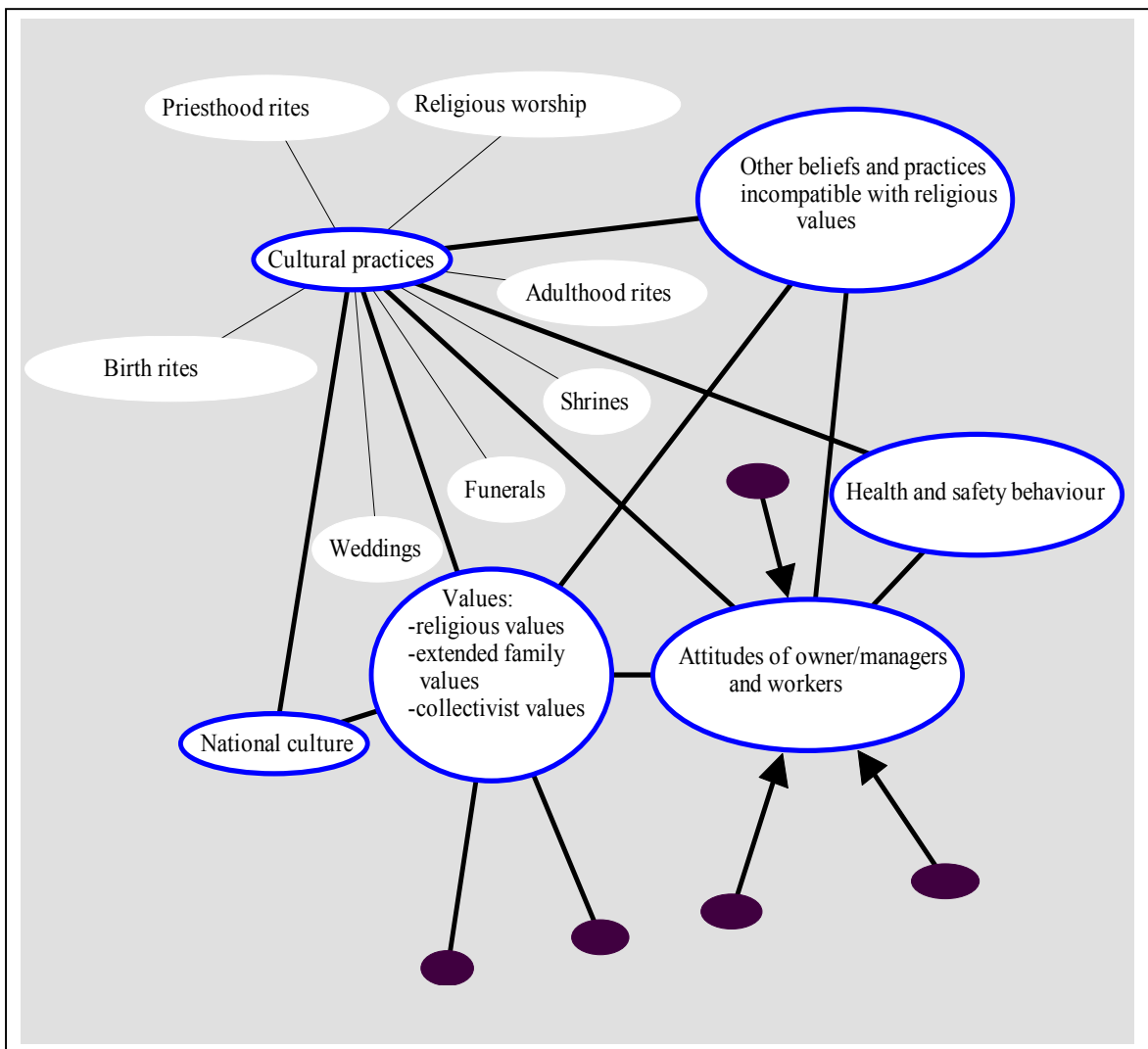


Figure 8.3 The socio-cultural environment as a determinant of health and safety behaviour

● Other influences

### 8.3 CHARACTERISTICS OF SMES AND THE ADOPTION OF HEALTH AND SAFETY MANAGEMENT PRACTICES

The results of binary logistic regression analysis suggest significant associations between annual turnover, number of employees, type of work SME specialises in, and age of business and some health and safety practices implemented by the SMEs. This result confirms research findings that demonstrate associations between organisational characteristics and

health and safety management practices presented in section 4.5. The study sought to find evidence from the empirical data gathered to support the four propositions stated in the introduction to this chapter.

Annual turnover is a predictor of six health and safety practices adopted by the SMEs namely: accident investigation procedures; accident reporting procedures; health and safety incentives; use of health and safety posters; documentation of method statements; and, health and safety inductions (sections 6.4.3 – 6.4.8). The binary regression coefficients positively correlate with the values of annual turnover categories that are significant predictors of all six health and safety practices. While no causality can be claimed to exist between turnover and the six health and safety practices, the results support the proposition that construction SMEs with small turnovers are less likely than their counterparts with large turnovers to adopt health and safety measures to control health and safety risks on construction sites. Owner/managers of businesses with small turnovers had conceived the risk level of their project sites as being low to warrant serious measures to be taken to lower the risks (section 7.4.5). These businesses generally carry out small projects and sometimes there is no continuity in the jobs they carry out. They thought certain health and safety measures were only necessary on larger project sites.

Also, many construction SMEs, particularly micro businesses suffer from failure to obtain jobs. This contributes to lack of attention to health and safety issues as owner/managers of such businesses will be more concerned with adopting survival tactics to win contracts which could be at the expense of health and safety. This is evident from complaints made by contractors to the effect that health and safety is more likely to be under-priced by a contractor desirous of winning a project at all cost than another who does not need a job to keep his workers engaged (section 7.6.1). The desire to be awarded a contract increases with the number of times a contractor is unsuccessful in bidding because of the need to recover or spread the cost of unsuccessful bids in future ones. In Ghana, the construction industry has seen a sharp increase in the number of domestic contractors over the past decade. This has contributed to a high competition among construction businesses for contracts, especially where owner/managers are certain of the clients' ability to honour payment certificates.

Similarly, the regression coefficients for the binary analysis on number of full time employees suggest a positive correlation with the health and safety practices of: accident investigation procedures; accident reporting procedures; use of health and safety posters; health and safety incentives; and, health and safety inductions. The regression coefficient for health and safety documentation is negative and therefore worth commenting on. If all organisational characteristics were controlled for, the coefficient becomes positive, indicating the existence of a similar correlational effect. These results suggest that the proposition, that there is no difference between the adoption of health and safety practices by firms employing few full time employees and those employing more full time employees is untenable. Health and safety requirements in contracts involving many public projects where fewer than 20 employees will be on site do not require the need for health and safety education on site and health and safety inductions. The effect of this is that contractors employing fewer employees tend not to adopt health and safety measures such as health and safety posters, health and safety inductions and other measures on their sites. Lack of specific provisions in contract conditions on health and safety therefore, leads to a compromise of contractors' responsibilities under the Factories, Offices and Shops Act and other health and safety regulations that ensure satisfactory, safe and healthy working conditions. The association between number of employees and health and safety practices may therefore be partly attributable to owner/managers' ignorance of their responsibilities under health and safety laws and failure to comply with the law because of competition which as explained, is characteristic of SMEs with fewer employees.

The preceding findings lend some support to the propositions that turnover and numbers of employees are positively associated with implementation of health and safety practices (propositions 1 and 2). This supports literature findings in section 4.5 that larger, more established and growth-oriented small firms are likely to take health and safety improvement decisions. The correlations observed in this instance, are explained by SMEs with larger turnovers more likely to benefit from continuity of projects and execute works in which the contract conditions required more health and safety measures to be put in place because of larger numbers of site operatives on site. This, to some extent, is an indication of owner/managers reliance on contract conditions and total neglect of their responsibilities

under health and safety law. In cases where contract conditions are silent on health and safety, the result is for construction works to proceed without due regard to other health and safety laws. Departments and Agencies responsible for health and safety rarely impose fines and other punitive measures to serve as a deterrent to future abusers of health and safety regulations. Other strategies such as health and safety education and campaigns are rarely carried in the construction industry of Ghana. The health and safety administration of the country has yet to bring a desirable change, especially, within construction SMEs in this regard.

The type of contractor defined here as those registered to carry out civil and road works or those registered to carry out building construction works is strongly associated with health and safety incentives and the documentation of method statements. As a predictor, it suggests civil contractors are more likely than building contractors to institute health and safety incentives and document method statements. Civil and road projects in Ghana require a significant commitment of public funds for which public accountability is a driving factor for public officers involved in such expenditure to adopt more stringent measures compared with most building contracts. Generally therefore, proper project documentation and compliance with labour standards are more exacting on civil projects than building projects. The funding of civil infrastructure development in most countries of SSA is provided by international donor agencies such as Department for International Development (DFID), International Development Agency (IDA), International Monetary Fund (IMF), Danish Development Agency (DANIDA) and World Bank. These funding bodies have contributed to improving health and standards in the civil and road sectors of the construction industry through their involvement in the procurement process. These two factors provide plausible explanations of the popularity of adoption of health and safety incentive schemes and documentation of method statements among civil and road SMEs in the study compared with building contractors. This finding also accords with the literature which indicates that civil engineering contractors are better at implementing health and safety measures than building contractors (Birchall and Finlayson 1996). The proposition that no difference exists in the adoption of health and safety practices between civil engineering and building contractors is therefore also untenable (with reference to proposition 3).

The regression results also indicate the age of SME to be a significant predictor of health and safety inductions. Older firms are likely to draw on experience gained over the years to implement health and safety inductions and orientations on site. In this regard, the proposition that long established SMEs are more likely to adopt health and safety measures is supported (with reference to proposition 4). Over three-quarters of the businesses have been operating for over 5 years and might therefore possess some experience in executing contracts with varying requirements for health and safety. Owner/managers of longer operating businesses have had a better exposure of health and safety issues than those with fewer years of operating which were less likely to experience health and safety challenges on the projects they executed. This is supported by the results reported in section 7.4.

#### **8.4 SITE PROCESSES AND HEALTH AND SAFETY MANAGEMENT**

The literature discussions suggest occupational health and safety legislation of many developing countries are incomprehensive and limited in coverage (section 4.5.1). Also, few contractors adopt measures to improve health and safety. In Ghana, while the minister for manpower development may in respect of construction works make regulations to address specific hazards and impose duties on project participants, no such regulations have been promulgated (section 4.2.3). The results indicate the measures actually implemented on most sites by SMEs fall short of the minimum health and safety standards spelt out in occupational health and safety legislations and provisions contained in contract documents. Considering that health and safety regulations are intended to make project sites satisfactorily safe and free from health risks, it is doubtful whether any significant achievements have been made in this regard. Notably, many owner/managers are unaware of their responsibilities under health and safety law and tend to comply with only contract conditions on health and safety. For instance, over half of the owner/managers were not sure if their procedures met the health and safety provisions of Ghana's main health and safety legislation; the Factories, Offices and Shops Act. Accident reporting to the Factory Inspectorate Department is also poor and many of the SMEs in the study rarely registered their sites as required under the Factories, Offices and Shops Act. Not surprisingly, the number of respondents who indicated that they complied with the Labour Act was more than the number that complied with the Factories, Offices, and Shops Act.



The results of the research reported in section 6.2.2 suggest that factory inspectors do not regularly visit construction sites to enforce compliance with health and safety legislation. Many other departments responsible for implementing health and safety standards are not adequately resourced to carry out their functions effectively. Project consultants' are more concerned about the quality and progress of works and pay little attention to health and safety issues (section 6.2.3). The climate of implementation of health and standards shows no significant departure from similar research findings conducted in other developing countries reported in section 4.5.1. Quality of materials and workmanship is often poor on many sites leading to fatal and serious accidents on site.

The number of businesses reporting their accidents to the Factory Inspectorate Department was the smallest compared to other departments to which accidents were reported. This raises a serious concern, given that the Factories, Offices, and Shops Act is the main source of guidance on construction health and safety in Ghana. In Ghana, accident forms have to be filled and accidents reported to the Labour Department and Factory Inspectorate in compliance with the Factories, Offices and Shops Act and Workmen's Compensation Law. However, most accidents go unreported to the latter department even though it is a statutory obligation to do so.

Reporting to the Labour Department seemed to be favoured because workers injured at their place of work are entitled to compensation payment administered by it; provided the injury is not a result of wilful misconduct on the part the worker. Injured workers are entitled to free medical care and their full earnings whilst undergoing treatment. However, reporting accidents to the Labour Department is not without problems. Owner/managers fear the image of their businesses will be dented and tend to think that disclosure of poor performance to government departments can compromise the autonomy they wield and their personal integrity as can be observed from section 7.4. The occurrences of many accidents and ensuing matters are normally resolved by management and injured person and his/her family relations. Some compensation payments are negotiated with the injured person and his/her family without involving the relevant government departments. This is supported by the

study's results reported in section 7.4.5. It is only when such negotiations fail that a report will be made to the relevant department for compensation to be paid to the injured person.

Reporting to government departments responsible for enforcing the Workmen's Compensation Law is not normally done if the injured person accepts the terms of the negotiation. Apart from the issue of compensations, the owner/managers of a business in which a worker is injured has to pay visits to the injured person and, in cases where death results, the owner/manager has to attend the funeral and make donations to the bereaved family. Where the owner/manager is unable to perform these roles, s/he may delegate the function to senior staff of the organisation. Showing concern for the welfare of the injured can be time consuming and involve substantial expenditure. The practice fosters close ties between owner/managers and employees and therefore helps in minimising the likelihood of workers compelling owner/managers of SMEs to report accidents to the appropriate enforcing agencies. It also, dissuades injured persons from demanding compensation payments through government departments responsible for such payments.

Investigations of accidents and reporting to senior management are important aspects of successful health and safety management (section 4.3). The need to investigate and report accidents follows from good corporate governance and demands for businesses to be socially, environmentally and legally responsible for the impact of their activities on other persons and the physical environment. Owner/managers need to be transparent, particularly regarding accident figures and preventive measures. A move in such a direction will win the commitment of employees to company goals as well as boost the confidence of clients, end users of facilities and the public have in the SME. Some of the owner/managers in the interview sample seemed to be aware of this need for transparency and to consider the interest of stakeholders particularly funding agencies and their own employees but few of them took the necessary measures in this regard. Whilst, in developed countries, good governance and corporate social responsibility form the tenets of doing business; in developing countries, as this research shows, these are largely demands that have not been met by SMEs. Raynard and Forstater (2002), in examining the implication of corporate social responsibility for SMEs argue that it cannot simply be transferred to SMEs, particularly those

in developing countries. They contend that there is the need to support SMEs to emulate corporate social responsibility practices appropriate to their setting.

The importance of health and safety training has been highlighted in the literature (section 4.3). In spite of the low level of implementation of health and safety measures, some owner/managers in the study recognised this importance and trained their site workers in health and safety. These were mainly owner/managers who had received training in construction methods and were therefore in a better position to supervise construction operations including health and safety without delegating these roles. However, on sites with qualified site supervisors/managers, training site workers in health and safety was entrusted to such appointed site staff because of their experience in health and safety matters and managing site operations. Many site workers in Ghana are school dropouts who have barely received training in the building trades. Apprenticeship training is a common form of training within construction SMEs. However, many trainees do not complete their apprenticeship training programmes before taking on full roles as competent tradesmen on site. This curtailment of the length required for trainees to become fully competent has negative consequences for health and safety on construction sites managed by SMEs. It is apparent that, no owner/manager would be willing, even when the business can, to finance employees' education in formal training institutions to pursue full time training programmes because of fear of such workers leaving for other construction firms in search of more lucrative employment conditions.

Training in construction health and safety within the formal educational system often does not reflect methods of construction and level of technology in developing countries or are not tailored to the realities of health and issues found on the construction sites. There are examples to illustrate the point; bamboo scaffolding and bamboo reinforced concrete are used in a number of developing countries including Ghana, yet guidance on the health and safety aspects of such materials is lacking in building codes and educational resources used in Ghana. While construction safety is an elective course in the syllabus for the HND programme in Building Technology, the topic of safety does not feature as a course on its own merit in the current curriculum for the undergraduate programme leading to a degree in

BSc Building Technology in Ghana. At the technician and craft certificate levels for building trades, health and safety is also not adequately addressed in the syllabi.

Project sites present unique health and safety challenges and thus call for inductions to be organised for site staff on specific site procedures, hazards to be encountered on site and emergency procedures for the site. While it remains a major concern in the industry in Ghana that the majority of sites do not benefit from such inductions, workers on a few sites do benefit from inductions either because it has been expressly stated in the contract or the owner/ manager has genuine concern for the health and safety of his/her workers.

Workers on new sites, especially where the project employs up to 20 site workers or more, are normally given health and safety inductions. Verbal communication in native dialects on; site procedures, safe behaviour while on site, working methods and particular hazardous conditions on sites are explained to workers by site supervisor/manager and, in some cases, the owner/manager. Workers have the opportunity to inform management of any health and safety concerns they think ought to be addressed at induction meetings. The extent of active participation of site workers in health and safety induction meetings depends on the working relations that exist between the owner/manager and his employees. Roles such as first aiders, mentors and trainers were found to be common in SMEs with more congenial family environment than those which had no such environment. An environment of trust and close working relations was sometimes absent from SMEs with new site supervisors and with a very high proportion of casual workers unlike their counterparts which employed full time employees and with site supervisors/managers which had worked for 10 years or more with their current employers. Casual and temporary workers were sometimes not given orientation on health and safety, particularly at times when progress of the construction works is behind schedule.

Health education is required to be carried out by personnel of the National Health Service for all projects sites. Health and safety posters are often used sparingly at construction sites for health education campaigns at project sites with more than 20 site workers financed by public funds or donor agencies. They are used by health personnel to tell the horrors of living with

the HIV/AIDS virus and the eventual demise of infected persons. They are also used to give directions for operating machinery in workshops of construction businesses and as warning signs on site. However, their use in this regard is limited to very few SMEs which have been operating for over 15 years in the construction industry.

Posters, as a means of communicating health and safety, are thought to present possible distortions in interpretation because workforce characteristics of the sites might not have been considered in their design. A notable example is one site which had posters in Chinese and English whereas the workers on site were predominantly Ghanaians who could only speak and read in twi (the Akan dialect in Ghana). Workforce characteristics is therefore a factor that could limit the effectiveness of health and safety communication using posters, as the message they convey are likely to be misunderstood by some workers on site.

There are lapses in the express delegation of health and safety roles to site supervisors/engineers on some construction sites managed by SMEs in the study. Most SMEs which delegated health and safety responsibilities did so informally. Young (1996) has emphasised the importance of site engineers in the management of health and safety on construction sites. Apart from ensuring that projects are completed at a greater value, lower cost and on schedule, site engineers have the added responsibility of ensuring no accidents occur on sites. This latter goal calls for pragmatic approaches on sites to reduce and control risks. Unfortunately for the construction SMEs in the study, as the results suggests, such a goal is far from achievable unless owner/managers endorse, formally or informally, the role of site supervisors/engineers in this regard. This is especially important since there is no law in Ghana presently that makes it mandatory for designers or engineers to manage health and safety risks upfront.

The results of the study reveal that health and safety incentive incentives were employed by the SMEs to enhance health and safety performance although, they did so informally. Monetary incentives and commendation for exemplary behaviour were the popular form of health and safety incentives. While monetary incentives, in the form of bonuses for having an accident-free site are often employed, their use could result in under-reporting and

concealment of accidents because workers would want to remain eligible for award (Hinze 2005, Lingard and Rowlinson 2005:32 and 301). Commendations for safe behaviour such as proper use of personal protective equipment and behaviours that avoided accidents were frequently cited by owner/managers as a health and safety incentive system adopted on sites. A study by Duff (1994) supports such behaviour-based health and safety incentive schemes. However, for such schemes to be effective, rewards need to be designed to elicit specific desirable behaviours that are within the control of workers.

Generally, almost all owner/managers (99%) tend to rely on provisions on health and safety in contracts to implement measures to control hazards on sites (section 6.3.4). They tend to avoid adopting measures on sites to control health and safety risks where contract documents were not specific on many issues bordering on health and safety. Owner/managers who adopted health and safety measures on sites in additions to measures provided for in contract conditions, did so partly to maintain a family environment within their businesses and not necessarily because of legal obligations do so. In these SMEs, the implementation of health and safety measures was greatly enhanced where clients and project consultants showed commitment to achieving higher health and safety standards on site. While health and safety policies may be required as a condition for award of contract, their actual implementation is unsatisfactory. Clients requiring contractors to have health and safety policies also require them to document method statements, carry out health and safety inductions and health education.

### **Welfare issues**

Contract clauses often make provisions for welfare facilities on site. However, contractors tend to disregard these provisions as the results of the study indicate in section 7.4. The devastating effects of the HIV (Human Immunodeficiency Virus) and AIDS (Acquired Immunodeficiency Syndrome) pandemic in Ghana have led to efforts by government and stakeholders to reach workers in construction because of the high risk of exposure to the virus in construction. Construction involves the movement of labour from one site to another, with often, workers' spouses, fiancés and fiancées separated from them for long periods of time and at long distances. This results in a high exposure to the risk of AIDS virus should

workers take on new sexual partners. Health education is required to be carried out by personnel of the National Health Service for all projects sites with more than 20 site workers financed by public funds or donor agencies. Condoms are also given to workers as part of a preventive measure. Such occasions are also used to educate workers in topical issues such as hygiene and communicable diseases.

## **8.5 CONSTRAINTS TO EFFECTIVE HEALTH AND SAFETY MANAGEMENT WITHIN SMES**

Effective management of health and safety within Ghanaian construction SMEs is constrained by factors at the level of the business and external factors which undermine an enabling environment which facilitates the management of health and safety.

### **8.5.1 BUSINESS LEVEL CONSTRAINTS**

Owner/managers need to have the requisite knowledge in order to manage their businesses effectively. This is the more important since many of them perform many business functions, rarely delegating areas to hired specialist or employees knowledgeable in them. Many owner/managers cannot be said to possess the requisite skills and knowledge to manage their business operations in a safe manner. Differences in health and safety management can be seen in SMEs with owner/managers who are more experienced in managing business operations and those in which the owner/managers have relatively little experience. Experience may be acquired through formal education or on the job in the course of time. Some owner/managers barely attained educational levels or had the requisite qualifications or experience which will equip them to effectively manage their businesses. While this is a contributory factor to ignorance on the part of owner/managers of their responsibilities under health and safety law, it is also a compelling force behind owner/managers sometimes resorting to bribing public officers to overlook health and safety aspects of their operations (CDD – Ghana, 2000). Experienced owner/managers, on the other hand, are more likely to be well informed on health and safety issues relating to their projects and also, to take appropriate measures to educate their workers on the risks of hazards on their project sites.

Many workers barely receive adequate training to develop competence to carry out tasks safely on site. The results of this study suggest shortage of skilled labour seriously undermines effective health and safety management within construction SMEs in the country. Most construction workers receive training on the job as apprentices, rarely successfully completing their training before assuming roles as qualified workers on site. The number of technical/vocational educational institutions in the country stands at 18. It is interesting, the Ghana policy of integrating technical/vocational courses into secondary education has not achieved its desired impact because courses at junior and senior secondary schools remain theoretical and lack the rigours of practical activity in traditional technical and vocational curricula.

The size of businesses per se is a limitation to effective health and safety management. Many construction SMEs face difficulties in accessing capital despite government assistance in this direction. The main barrier to SMEs' inability to access capital from financial institutions is the perception they have about SMEs; that the size of a business is inversely proportional to the risk associated with it. Many programmes which have been launched by government to facilitate access to financial resources by construction SMEs in the country have been unsuccessful because of their high risk nature (Eyiah and Cook 2003). The situation therefore invariably leaves SMEs, with the only option of raising funds through non-bank sources at a rather higher cost and under very unfavourable terms of repayment of loans. Starved of resources, especially finance, Owner/managers may tend to avoid investing in health and safety, an area where immediate benefits are unlikely to be realised. This, to some extent is supported by the study's results in section 7.6.2.

Due to limited resources to attract well qualified workers, most construction SMEs in Ghana are compelled to employ school drop outs and persons who want to start a career in the building trades to enable them provide for the livelihood of their families. Some of these persons may be extended family relations of the owner/manager or spouse of the owner/manager. After gaining some level of experience employees of SMEs will leave for bigger firms for better working conditions and because of the prestige associated with working in large often, foreign construction businesses. Ghanaian construction SMEs in this



way, are constantly starved of qualified personnel. To enhance the health and safety performance of SMEs, it is therefore necessary to strengthen the human resource capacity construction SMEs.

The method of award of construction contracts also offers little opportunity for owner/managers to be motivated to manage health and safety effectively. Contracts are awarded to the lowest bidder in competition with other construction businesses. There is no consideration of the health and safety performance of construction businesses in the award of contract, only that they are required to have a valid labour certificate certifying that they comply with all labour standards. Additionally, there is no incentive for managing health and safety effectively as insurance companies neither take into account the health and safety performance of businesses nor the measures if any, they put in place to control the risk of workplace hazards when calculating insurance premiums (section 7.3.3).

The absence of measures which will ensure construction businesses which take proactive measures to control the risks of workplace hazards to gain commercially therefore, leads to low motivation to manage health and safety within most SMEs. This observation accords with research findings in other developing countries. Ngowi and Mselle (1999) for instance, found that contractors in developing countries gain little competitive advantage from good health and safety management.

#### **8.5.2 CONSTRAINTS POSED BY THE EXTERNAL ENVIRONMENT OF SMES**

##### **Weaknesses in occupational health and safety administration**

The institutions with responsibility to implement health and safety standards are several and coordination of their activities is poor. The health and safety law of Ghana has been inherited from British rule. The main health and safety law is the Factories, Offices and Shops Act administered by the Factory Inspectorate Department. It has undergone few revisions to keep up with the fast pace of industrialisation in the country. It sets health and safety standards for many economic sectors including construction. Many other laws have been enacted which seek to also set health and safety standards at workplaces. These, also affect the construction sector. The main ones include; the Workmen's Compensation Law, the Labour Act, Mining

Regulations, National Safety Commission Act and the Environmental Protection Agency Act. All these laws have sections dealing with health and safety relevant to works of civil engineering and building construction. Many of the provisions contained in the various laws are similar, resulting in duplication in roles. A number of ILO Conventions on health and safety have also been ratified by Ghana but their practical implementation is problematic.

There is duplication of roles and owner/managers are confused about their responsibilities under the several pieces of health and safety legislation they have to comply with. The present national system of occupational health and safety management whereby several government ministries, departments and agencies are responsible for implementing various health and safety related legislation results in bureaucracy and corruption in the administration of occupational health and safety. It is worrisome, as Tetteh (2003) has rightly pointed out, that the different pieces of health and safety legislation are also the source of overlapping of areas of jurisdiction of the government institutions responsible for occupational health and safety.

The present study has shown that the impact of Ghana's health and safety administration system on the operations of construction SMEs is minimal. The situation is largely as a result of inefficiencies in the institutional structure responsible for implementing health and standards on construction sites. There is lack of coordination of the activities of the various government ministries, departments and agencies responsible for implementing health and safety legislation in the construction industry. Conflicts over jurisdictions coupled to the lack of adequate resources available to these government institutions have resulted in low outputs in connection with health and safety functions. Also, many departments involved in prevention services require contractors complying with health and safety legislation to go through different procedures. The paperwork involved in complying with the various legislations is cumbersome. Owner/managers get around this paperwork by influencing senior officers responsible for enforcement of health and safety laws often, by offering them undisclosed sums of money. The second factor contributing to the low impact of the occupational health and safety administrative system of Ghana is attributable to owner/managers' ignorance of their responsibilities under the various health and safety

legislations. Interestingly, the few that are fairly aware of their responsibilities are dissatisfied with the apparent lack of a unified approach to effecting compliance with the relevant health and safety laws.

The efficiency of the various institutions responsible for occupational health and safety is further hampered by lack of adequate resources and logistical constraints. All the institutions with the exception of the EPA, lack laws defining funding mechanisms, resulting in overdependence on government subvention which is not sufficient to enable them carry out their functions effectively and efficiently. This has resulted in most departments and agencies restricting their operations to certain industrial sectors and geographical locations. It is noted that construction sites which ought to receive the attention of inspectors are rarely visited, hygiene surveys are not carried out in the construction sector and only construction sites registered with the Factories Inspectorate are sometimes inspected.

The preceding weaknesses in the occupational health and safety administration system adversely affect health and safety management within construction SMEs. The Factory Inspectorate is barely capable of ensuring construction SMEs in the country comply with the Factories, Offices and Shops Act. Other departments and agencies whose functions border on health and safety at constructions pay lip service. Contractors are rarely penalised for flouting health and safety regulations at their sites. Adverse publication of incidences on the sites of construction SMEs are rare because of poor reporting system. The lack of pressure brought to bear on construction SMEs, which will compel them to comply with health and safety regulations has resulted in many of them not according health and safety the necessary attention it deserves. Proactive measures to effectively control the risks of construction site hazards are adopted on sites only upon pressures from funding agencies and, in a few cases clients.

The issue at stake here is not only one of coordinating the activities of many government institutions with health and safety functions but also, ensuring an enabling institutional environment through minimising or eliminating administrative bureaucracy and corruption. The different government institutions are mandated to implement different health and safety

laws although the ultimate goal each has is the same; to significantly reduce the number of accidents occurring in the country's occupations. Having to deal with all these organisations in an industry environment where corruption is relatively high is burdensome, time consuming and frustrating. The health and safety administrative system of the country may be best described as a mal-institutional environment hampering effective health and safety management within SMEs in the country.

### **Government commitment to occupational health and safety**

Like many other developing countries, policy makers and economic planners have paid little attention to hazards that the activities of the industry pose to construction workers and the public. Notwithstanding the number of accidents in the construction industry which go unreported, available statistical figures of accidents occurring in the sector reported in section 6.2.2.3 are unacceptably high. It is therefore surprising that not much is done at the policy level to ensure construction sites are safe. Health and safety in Ghana's construction industry has either been absent from or, occupies a relatively unimportant position in national political agendas of both military and civilian administrative eras in country's history. This trend has continued to date in spite of a fast rate of industrialisation which increasingly places the country's workforce in hazardous sectors such as construction at risk.

There is no single effective health and safety legislation for the construction industry in Ghana. Instead, many health and safety regulations applicable to the construction industry in Ghana have been enacted by parliament at various times. Translating ILO conventions on health and safety which have been ratified by the country into national health and safety laws and integrating these, with existing health and safety regulations in the country is an unresolved health and safety issue to date. Different government ministries, departments and agencies are responsible for implementing health and safety laws of the country. These regulations and laws have been a source of conflict between government institutions responsible for implementing them. Owner/managers with a genuine desire to comply with health and safety legislation find it difficult to understand their responsibilities under the various pieces of legislation. The absence of guidance information provided by the appropriate institution further compounds the problem. Resources for promoting compliance

with health and safety legislation are scanty. The primary source of funding of prevention services have been government subvention and this has proved woefully inadequate, as the central government budget is unable to meet budget estimates of government ministries, departments and agencies. While this may seem a good ground for one to sympathise with the amount of government expenditure on health and safety in the construction sector, it doubtlessly undermines the positive impact the construction industry could have on economic growth as a result of improved health and safety performance of the sector.

The preceding arguments give an indication of the Ghana government's low level of commitment to ensuring construction sites are safer and healthier. While the government continues to ratify ILO Conventions, commitment by way of adequate and necessary resources for their practical implementation is often not considered. Countries such as UK, Malaysia, Brazil and South Africa are examples of countries which demonstrate commitment to improving health and safety at construction sites. These countries have instituted specific prevention programmes aimed improving health and safety at construction sites. The government in Ghana similarly, needs to demonstrate its commitment to improving the health and safety performance of the sector in a way appropriate to the national setting.

As a major client of the construction industry, government has a greater potential to influence health and safety management within SMEs. However, for this to be achieved requires government to step up its commitment to making construction sites safe and healthy by playing the role of a health and safety exemplar and pace setter. In this regard, government needs to pay for good health and safety. Government commitment for addressing poor health and safety performance of the construction sector should also encompass finding strategies aimed at mobilising resources for enforcing compliance with health and safety law. This is even the more necessary considering the meagre resources available to prevention services.

### **Participation of other stakeholders in occupational health and safety**

It is widely acknowledged that the future of health and safety in the construction industry depends on collaboration between major stakeholders namely: labour, industry; academia; private organisations; and, government (Coble and Haupt 1999, ILO 2005, Sweeney 1995).

However, the state of health and safety management in Ghana is one in which the participation of health and safety stakeholders is minimal. The responsibility for construction site health and safety lies with the main contractor resulting in many designers, consultants and clients absolving themselves of any blame should accidents occur on site. The active participation of labour unions, employers and designers in the built environment in health and safety matters in the country is yet to be realised. Presently, there is no national occupational health and safety policy in line with the requirements of ILO Convention 155 which requires ratifying countries to develop and implement national OHS policy. Effective implementation of ILO conventions has so far, proved problematic in Ghana as happens with the implementation of health and safety related policies in many developing countries (Ahassan 2001).

### **State of Ghana's economy**

Five decades after gaining independence, Ghana's economy is rural agriculture based and dependent on loans from the international financial institutions and foreign governments. One third of the population live below the poverty line with barely any hope of moving above the poverty line (Ghana Statistical Service 1995). The economy has gone through tumultuous periods and presently, and in line with the Millennium Development Goals (MDGs), Ghana's development strategy is to transform the country into a middle income country by the year 2015. The state of the economy impacts upon health and safety in two ways indirectly. Firstly, workers bargaining power for good health and safety is undermined since they are more concerned about wage levels. This is true of construction SMEs where many of the employees do not belong to any of the recognised labour unions as evident from the results of the study (7.6.8). Secondly, employers can take advantage of the vulnerability labour to intimidate workers on issues, especially bordering on safety of the working environment.

Low infrastructural development, coupled with a manufacturing sector which performs below capacity compels many construction businesses to manufacture materials and components on site. Thus, concrete, doors, windows, blocks and many other materials are typically, manufactured on construction sites by SMEs. The manufacture of materials and components on site is labour intensive thus exposing many workers to accidents during the manufacturing

process. Site production and manufacture of materials and components poses health and challenges that require advanced planning, documentation of method statements and risks analysis. Materials handling accidents are a common feature of Ghanaian construction sites because of unsafe and improper materials handling techniques. Personnel of many SMEs do not have requisite knowledge and expertise to tackle these issues.

Economic reforms over the past two decades have had a tremendous impact on the construction industry of Ghana. The state owned construction business has been privatised and, ever since, more foreign construction businesses have been established in the country as a result of improved business environment. Many Ghanaian construction SMEs cannot successfully compete with foreign construction businesses because of inadequate resources and little government support given to the former. Thus, many construction SMEs source jobs from the informal sector which operates under little regulation. The informal sector clients and contractors typically circumvent regulations, including health and safety and formal processes to get their finished building at a low cost. The primary objective of contractors' is to maximise profits and that of small private clients which dominate the informal sector of the industry, to obtain the finished product at the lowest cost thus leading to poor health and safety performance.

### **Practices which undermine workplace health and safety**

Socio-cultural values have some positive impact on the management of health and safety within SMEs. However, certain practices such as extravagant commitment of resources by owner/managers in fulfilling their extended family obligations, particularly during occasions such as funerals, weddings and other rites, undermine the effective allocation of the limited resource available to most SMEs. Also, the presence of certain prevailing negative beliefs and practices are counter productive and incompatible with the principles of health and safety management. These two factors undermine an enabling socio-cultural environment conducive to health and safety management within SMEs in Ghana. Traditional rulers and NGOs in Ghana continue to wage a relentless war on outmoded customs and primitive belief systems, but, so long as they persist, their impact on the quality of life, particularly workers' health and safety, cannot be ignored.

## 8.6 SUMMARY OF KEY ISSUES

Specific issues which affect health and safety management within Ghanaian construction SMEs from the preceding discussions include:

- Lack of skilled human resources to effectively manage health and safety and to carry out site operations in a safe manner within construction SMEs. Owner/managers as well as their employees lack the necessary skills and knowledge to effectively manage their companies as well as site operations in a safe and healthy manner. Human resource training and development is therefore necessary and can be undertaken to help address the issue.
- Government support to construction SMEs aimed at removing key obstacles to the performance of the sector is inadequate. The constraints faced by construction SMEs particularly, lack of adequate financial resources to sustain own operations, lead to health and safety not accorded the necessary attention it deserves. More concerted effort is needed at supporting SMEs to enhance their capacity.
- Inefficiencies in the institutional structure responsible for implementing health and safety standards at workplaces adversely affects owner/managers' attitudes towards health and safety in the country. There is poor coordination of the activities of the many institutions responsible for implementing health and safety standards. Also, lack of guidance information on health and safety laws has contributed to ignorance on the part of owner/managers of their responsibilities under health and safety law. Restructuring of Ghana's occupational health and safety administration system is necessary for a positive change in the attitudes of owner/managers and site operatives towards occupational health and safety to take place.
- Practice of corporate social responsibility within SMEs needs careful consideration. On the one hand, it can prove to be an extra burden on SMEs to meet their obligations socially and environmentally. On the other hand, the benefits of being socially and environmentally responsible could offset the cost of investment in this direction. Owner/managers need to understand the impact of corporate social responsibility on their businesses.
- Appropriate procurement practices that promote the adoption of good health and safety management practices by SMEs is an issue. Presently, competitive tendering and the



practice of the award of contracts to the lowest bidder act as a disincentive to proactive health and safety management by construction SMEs. Use of alternative procurement methods, which can promote the adoption of health and safety best practices along with other benefits in the country have yet to be explored.

- Commitment to fulfilment of extended family obligations can have a negative impact on health and safety management within construction SMEs. Diversion of resources which ought to be allocated to organisational functions including health and safety, to meet extended family obligations has the potential to undermine health and safety management. In the same vein, negative beliefs which are incompatible with traditional African religion, Islam and Christianity, lead to misconceptions about various facets of life including safety. These hamper effective management of health and safety.

## **8.7 FRAMEWORK FOR IMPROVING HEALTH AND SAFETY MANAGEMENT WITHIN CONSTRUCTION SMES IN GHANA**

The environments of SMEs have been considered in section 8.2. In section 8.2.1, it has been pointed out that high poverty levels compel many construction workers to show less concern for the health and safety aspects of their operations and that owner/managers tend to take advantage of the cheap labour situation prevailing in the country to overlook health and safety aspects of their operations; the primary reason being that they can easily replace workers dismissed on grounds of complaints made by them on poor health and safety at construction sites. Also, it has been pointed out that construction SMEs face financial and other resource constraints that limit their capacity to manage their operations in safe and healthy manner.

The institutional structure for implementing health and safety laws has been discussed in section 8.2.2. It has been emphasised that many government departments and agencies responsible for health and safety has led to poor coordination and bureaucratic procedures in occupational health and safety administration in the country. In addition, overdependence on government subvention which is woefully inadequate lowers the efficiency of enforcing agencies. Unsurprisingly, these constraints are reflected in the shortcomings in health and

safety management within Ghanaian construction SMEs: poor compliance with health and safety laws; workers and owner/managers are ignorant of their responsibilities under health and safety laws; and, inadequate measures adopted to control hazards by many SMEs.

The influence of the national culture on health and safety management has been discussed and the relevance of traditional African religious values and the extended family pointed out. Values originating from the Ghanaian extended family system were found to enhance workers' commitment to organisational goals including health and safety. However, extended family obligations were noted to be burdensome with often, meagre organisational resources being diverted to fulfil the needs of members of an extended family. This, therefore leads to health and safety not accorded the desired level of attention it deserves. Other issues have also been identified which have practical implications for health and safety management and therefore need careful consideration.

In the light of these arguments and the evidence provided by the results of the study this section considers the aggregate influence of the aspects of the environments of SMEs which have been discussed and ways of improving health and safety management within construction SMEs in Ghana. The outcome of this is a framework for improving health and safety management within construction SMEs in Ghana (Figure 8.4). Letters A–G are used as labels for the different elements of the framework. The framework seeks to demonstrate that the adoption of health and safety management practices and related decisions within construction SMEs are an outcome of attitudes of owner/managers and employees which have been shaped by the economic, institutional, legal, socio-cultural and internal environments of construction SMEs in Ghana.

The study has provided evidence that supports the negative impact the economic environment has on health and safety management within construction SMEs. The economic environment as a determinant of health and safety attitudes is seen in the light of workers' desire for improved living standards, almost exclusively by earning higher salaries and being paid promptly even where these are at the expense of good health and safety. The pressures of having to cater for the needs of their families and to fulfil extended family obligations means

workers have to work hard, often under unacceptably high risks situations; on many sites, it is a trade-off between demanding for safe and healthy working conditions and the risk of losing ones job. In the absence of pressure from employees to ensure construction sites are safe and free of health hazards, owner/managers rarely take necessary actions to address health and safety issues on construction sites or worse still, they may act in ways that increase the risks of hazards on construction sites as represented by the element of the framework labelled F. This element of the framework leads to another one labelled G which means the failures to address health and safety issues by owner/managers and employees and/or inappropriate behaviours need redress. For instance, for unfavourable economic conditions, there is the need for good and implementable working conditions and worker education that will bring about a positive change in attitudes towards construction site health and safety. These specific actions to address the negative influence the environment of construction SMEs has on health and safety behaviours are presented as recommendations of the study in section 8.7.1.

The institutional structure for occupational health and safety administration and the legislation it seeks to implement have made little progress in bringing about a positive change in attitudes that will enhance health and safety management within construction SMEs. The study has determined this failure to be mainly attributable to lack of adequate financial and logistical support required for the current institutional structure to function effectively. Also, the form of institutional arrangements for implementing health and safety laws defeats the purpose for which such institutions were established. This unfortunate situation condones behaviours that are inimical to attaining higher levels of health and safety performance within construction SMEs (depicted by F in Figure 8.4). The situation therefore calls for measures to address the shortcomings of the institutional and legal environments (represented by the element of the framework labelled G). These measures are the subject matter of the recommendations of the study for improving health and safety performance within construction SMEs as for the economic environment.

The Ghanaian socio-cultural value system shapes attitudes of members of the society leading to behaviours which can either facilitate health and safety management or adversely affect it. Evidence of the latter behaviours can be seen in construction SMEs that nurture an extended

family environment discussed in section 8.2.3 of the study while negative believe systems and some cultural practices are likely triggers of the latter behaviour. Cultural practices that hamper effective management of health and safety include; funerals, commitments to extended family obligations, polygamy and dowry systems which are still practiced, particularly in the three northern regions of Ghana. These require huge resources; time, financial resources and logistics at the expense of health and safety and other organisational functions. While the need for social transformation to address these issues is necessary, much can also be achieved if employees and owner/managers of SMEs are educated on the health and safety challenges which these aspects of culture present to construction SMEs in line with F and G of the framework.

By addressing issues that influence attitudes which result in behaviours which have negative consequences for health and safety management by taking appropriate measures, SMEs will in time develop new attitudes which will enhance health and safety performance of construction sites and or modify certain of their attitudes that hinder the safety of construction sites. Ajzen and Fishbein (1980, 2000) established the link between attitudes and behaviours. In their view, attitudes are manifested as intentions which in turn, under certain conditions translate into behaviours. Thus, the framework is based on the assumption that attitudes acquired as a result of redress of the aforementioned issues should, under appropriate conditions yield desirable health and safety behaviours. Labels D and E are elements of the framework that relate to actions and behaviours which enhance health and safety resulting from attitudes acquired through the interaction of SMEs with their environments. The enhancing environments in this case, need to be reinforced (labelled E). Reinforcing enhancing environmental factors and readdressing issues which adversely affect construction site health and safety is a continuous process that links SMEs to their environments with cumulative positive effects on safety performance of construction SMEs.

This framework, apart from being useful in helping to organise future research on health and safety in the same setting, contributes to the understanding of health and safety management within construction SMEs within the Ghanaian context. It highlights the need to create enabling conditions through reinforcing aspects of the environment of SMEs which favour

health and safety management within construction SMEs while taking necessary steps to overcome barriers to managing health and safety effectively. With time, as the necessary measures are taken to create an environment that facilitates health and safety management, the negative impact the environment has on health and safety management within Ghanaian construction SMEs should lessen. The section that follows presents recommendations for improving health and safety management within construction SMEs which relate to the issues that need redress and aspects of the environment that need to be reinforced.

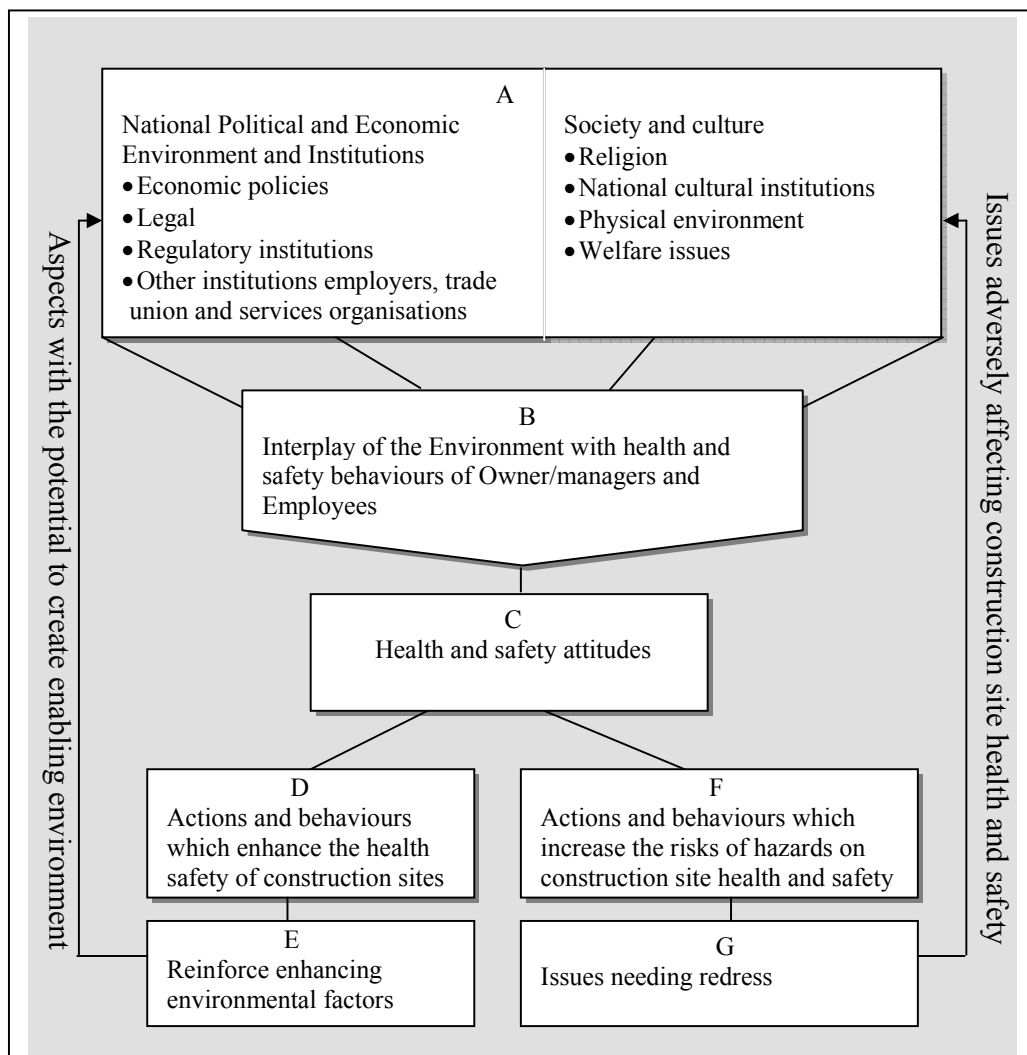


Figure 8.4 Framework for improving health and safety management within SMEs in Ghana

### **8.7.1 RECOMMENDATIONS FOR IMPROVING HEALTH AND SAFETY PERFORMANCE OF CONSTRUCTION SMES**

Creating and sustaining an enabling environment and enhancing the capacity of construction of SMEs to manage their operations in a safe and healthy way are necessary if any significant improvement in the health and safety performance of the sector is to be realised. Based on the analysis of the contextual environment and health and safety management practices of Ghanaian construction SMEs, this study makes the following recommendations for improving health and safety management within the sector.

- Raising the level of commitment government has for occupational health and safety by setting aside a percentage of the contract sum for every project which the government finances as a 'health and safety sum'. This sum should then be paid to the contractor for implementing specific health safety measures on the construction site. This will ensure that contractors get paid for effectively managing health and safety unlike the present system in which price, inclusive of the costs of health and safety is a key determinant of contractor selection. In this latter system, proactive management of health and safety is a disincentive leading to contractors slicing down the prices of bill items relating to health and safety.
- Overcoming the overdependence of enforcing agencies on government subvention through enacting laws defining appropriate funding mechanisms for government institutions directly responsible for implementing health and safety standards on construction sites. Sources of funding should include government and non-government sources. Non-government sources include; fees for services rendered to construction businesses and donations from the public and NGOs.
- Easing compliance with health and safety regulations through the reduction of the number of enforcing agencies/departments to a single department with overall responsibility for occupational health and safety of all economic sectors. Divisions within such a department could then be responsible for health and safety issues affecting various economic sectors in the country. However, this study does not advocate for the merging of the existing departments with health and safety administrative roles but rather, a single government outfit with authority to implement occupational health and safety law which covers all industrial sectors of the country.

This may require some of the existing departments and agencies with responsibilities for occupational health and safety to relinquish all their health and safety roles.

- Enhancing the capacity of SMEs to enable them to manage their operations in a safe and healthy manner through contractor education and training. Contractor education should be modelled around the extended family culture as an enabler of health and safety. Secondly, practical guidance information on health and safety should be developed and made available to construction SMEs. The guidance material should be easy to understand and free of legal and technical jargons. The guidance should be revised to keep up with revisions of all relevant health and safety laws.
- Enhancing the competence of workers in construction SMEs by introducing health and safety in the curricula of tertiary education and technical/vocational education and introducing construction training programmes accessible to persons without formal educational qualifications. This will complement training in civil engineering and building construction provided by formal educational institutions in the country. The training programmes could be run by construction skills training centres at district and regional levels in the country and funded by levies to be paid from contractors' payment certificates.
- Creating a sustainable construction health and safety research and information resource base by forming a health and safety information centre through collaboration with institutions under the Council for Scientific and Industrial Research (CSIR) which are responsible for research and dissemination of research information in construction. These institutions are the Building and Road Research Institute (BRRI) and the Institute for Scientific and Technological Information (INSTI). Also, departments and faculties in tertiary institutions offering courses in construction, professional institutions such as Ghana Institution of Surveyors (GhIS) and Ghana Institution of Engineers (GhIE) can facilitate such research effort. The Factory Inspectorate Department should play the role of lead partner by working closely with these other government departments and research institutions in the country.

## **Validation of recommendations for improving health and safety performance of Ghanaian construction SMEs**

Creating and sustaining an enabling environment and enhancing the capacity of construction of SMEs to manage their operations in a safe and healthy manner are necessary if any significant improvement in the health and safety performance of the sector is to be realised. Draft suggestions were developed to address the shortcomings in health and safety management within SMEs. The suggestions for improving health and safety performance of construction SMEs were sent to owner/managers who participated in the study and key health and safety stakeholders to obtain their views on the practicality of the suggestions on the following dimensions:

- justification of the recommendations on grounds of their cost and benefits to SMEs and/or government;
- the potential of each suggestion in improving the health and safety performance of construction sites;
- ease of implementation of the suggestion;
- obstacles to implementing the suggestion; and
- additional comments (if any) relating to the suggestions or improving health at construction sites (see Appendix D).

Additional suggestions and comments were made by four of the respondents (see Appendix F for comments made by respondents). These comments have been incorporated in the suggestions which met the above criteria and constitute the recommendations for improving health and safety performance of construction SMEs reported in the preceding section (section 8.7.1).

## **8.8 SUMMARY**

In this chapter, health and safety management practices of Ghanaian SMEs have been examined. Relationships between organisational characteristics of SMEs and health and safety practices have also been examined. The discussions reveal owner/managers' close relationships with their employees is a significant factor behind their attitudes to health and



safety. The adoption of practices such as the delegation of health and safety roles, employee participation in health and safety management and provisions of health and safety resources are more of an outcome of close working relations between owner/managers and their employees rather than fear of being penalised by enforcing agencies.

The institutional set up responsible for occupational health and safety administration of the country's construction sites have been discussed, highlighting some shortcomings in the institutional and legal frameworks. The role government plays in providing an enabling environment to support the establishment and growth of SMEs have been discussed and weaknesses in the implementation of policies relating to SMEs particularly, those in the construction sector identified. The commitment of government to creating an enabling environment to enhance the performance of the construction sector and to secure economic growth is questioned. It is argued that construction SMEs will continue to face stiffer challenges to their growth in the absence of an enabling business environment and these will have serious implications for health and safety within the sector.

The relevance of socio-cultural values to health and safety management within construction SMEs has also been discussed. Ghanaian religious value systems are tended towards a feminine culture and are argued, to support harmonious working relations in construction SMEs in the country. Also, a family environment found in most of the SMEs is a natural outcome of the extended family value system. A significant outcome of this is that the bond between employees and management in most SMEs is much stronger in SMEs that nurture an extended family environment than those that do not. An extended family environment, it is argued, encourages employee participation in health and safety management and secures employee commitment to the business organisation including health and safety issues.

However, it is noted that certain negative practices and believes are inimical to health and safety management. The section concludes the discussions by identifying and highlighting the main constraints to health and safety management within SMEs and makes recommendations, based on a framework developed for improving health and safety performance of

construction SMEs in Ghana. The next chapter considers the conclusions of the study and recommendations for future research.

### **9.1 INTRODUCTION**

The main objective of the study is to understand the influence of the contextual environment on health and safety management within construction SMEs in Ghana and to develop a framework of recommendations for improving health and safety performance of the sector. In pursuing this objective, a multi methods strategy was adopted, with a holistic view of the environments internal and external, within which health and safety management within SMEs takes place is considered. Three chapters (2, 3, and 4) were devoted to discussions of literature on the contextual background, SMEs and health and safety based upon which key issues identified were posited as the research questions. The chapter on the methodology (chapter 5) considered the unique characteristics of SMEs and the challenges they present to the data collection process. A successful engagement of owner/managers in the research required commitment from first, the national executives, second, the regional executives and third, consultants with whom they closely worked with. This was achieved through exploratory field interviews to assess the task of data collection which the researcher had at hand and as a tactical approach for engaging them in the research. Chapters 6 and 7 presented the analysis of results of both primary and secondary data. Chapter 8 presented discussions of the results in chapters 6 and 7 along the lines of emergent themes derived from the results of the study. The discussions put the results of the study in context, identifying key issues and barriers to the effective management of health and safety and makes recommendations for improving health and safety performance. This chapter, which is the ninth chapter, summarises the key findings of the study and makes recommendations for further research.

### **9.2 ACHIEVEMENT OF THE RESEARCH AIM AND OBJECTIVES**

The aim of the research is to understand the influence of contextual environment on health and safety management within construction SMEs in Ghana and to develop a framework of recommendations for improving health and safety performance of the sector. In pursuing this

aim, four objectives were established. The fulfilment of each of the four research objectives is set out in the following subsections.

### **9.2.1 FULFILMENT OF THE FIRST OBJECTIVE**

The first objective of the research was to examine the contextual influences; cultural, institutional, legal and economic on health and safety management within construction SMEs in Ghana. In this regard, the analysis of the cultural environment reveals that Ghanaian traditional religious values have significant influence on the health and safety attitudes of employees of SMEs, particularly that traditional religious value systems are compatible with principles of health and safety which require a worker to be responsible for his/her health and safety and that of other persons in the same workplace. This is evidenced by workers voluntarily accepting the role of mentors and owner/managers acting as ‘fathers’. Also, the Ghanaian extended family values also have strong influence on workplace relations within construction SMEs. Cooperation between owner/manager and employees and between employees and their commitment to business goals are enhanced by moral traditional religious values and extended family values. These values observed in this study, foster harmonious relationships and employees’ allegiance to owner/managers and thus, act as enablers to health and safety management within SMEs that encouraged such environments.

The socio-economic context defines behaviours and health and safety attitudes. Workers are more concerned about immediate monetary rewards and show less concern for hazardous working environments. Government spending on occupational health and safety is limited by budgetary constraints. Institutions responsible for implementing health and safety standards on construction sites are thus constrained logistically and financially. In consequence, therefore Ghana presently, can be said to lack an enabling environment which could promote health and safety management within businesses particularly SMEs. The absence of an enabling environment translates into a myriad of constraints facing SMEs in relation to health and safety management. There is no available guidance on health and safety for SMEs, many owner owner/managers are ignorant of their responsibilities under various health and laws and the few who are aware of the numerous health and safety institutions and laws which regulate their activities are discontent with the system of occupational health and safety

administration of the country. Clients and consultants do not accord construction site health, safety and welfare the level of attention it deserves; but rather are more concerned about the quality and cost of the finished product and handing over of the project on schedule.

### **9.2.2 FULFILMENT OF THE SECOND OBJECTIVE**

The second objective of the research was to evaluate the health and safety management practices of Ghanaian construction SMEs. Four propositions were developed in relation to this objective of the research. The achievement of this objective vis-à-vis these propositions are as follows.

**Proposition one: construction SMEs with few employees are less likely to adopt health and safety practices. Those with a large number of employees are likely to be health and safety conscious and adopt measures to control health and safety risks.**

This proposition has been investigated and ascertained that number of employees predicts the adoption of accident investigation and reporting procedures, use of health and safety posters, implementation of health and safety reward schemes and induction training. The tendency not to adopt any measures to control hazards on sites is more common in very small SMEs especially micros because of the informal environment within which they operate; most of them undertaking construction work without formal contracts.

**Proposition two: construction SMEs with small turnovers are less likely than their counterparts with large turnovers to adopt health and safety measures to control health and safety risks.**

Similarly, the investigation of this proposition ascertained that turnover predicts the adoption of accident investigation and reporting, use of health and safety posters, implementation of health and safety reward schemes, documentation of method statements and health and safety induction training.

**Proposition three: civil engineering SMEs are more likely to adopt health and safety practices compared to building contractors. (This proposition was derived from**

**literature suggesting that contractors specializing in civil engineering works are better implementers of health and safety practices)**

The investigation of this proposition in the given context ascertained that SMEs specializing in civil works exhibit a better tendency of adoption of health and safety practices than their building counterparts. Civil engineering contracts generally benefit from more formal approaches because of their magnitude in financial terms and requirements for accountability of public funds. These therefore, make the management of civil engineering projects in Ghana more exacting and accordingly, health and safety being paid more attention than in most building projects.

**Proposition four: long established SMEs are more likely to adopt health and safety measures.**

The investigation of this proposition ascertained that long operating SMEs with better exposure to health and safety issues were more likely than their counterparts with very little experience to give induction training even where no specific provision was made for it in contract conditions.

**9.2.3 FULFILMENT OF THE THIRD OBJECTIVE**

The third objective of the research was to identify the critical factors limiting the capacity of SMEs in Ghana to manage their operations in a safe and healthy manner. The research has identified constraints in both the internal and external environments of Ghanaian construction SMEs which hamper the effective management of health and safety. These constraints are therefore a fulfilment of the research's third objective.

At the business level, Ghanaian SMEs are constrained by size related constraints which hinder them from accessing financial resources from merchant banks because of the latter's perception that the risks associated with a business are inversely proportional to the business's size. This difficulty in accessing finance acts as a disincentive to investments in health and safety by Ghanaian construction SMEs. Additionally, owner/managers' insufficient knowledge of health and safety issues that relate to their businesses, coupled to

insufficient human resources, hamper effective health and safety management within their businesses. Tender awards and procedures do not take into consideration the health and safety performance of construction SMEs and often, contracts are awarded to the contractor that underbids health and safety.

The external environment of Ghanaian construction SMEs as revealed by this study does not facilitate effective health and safety management. First, the institutional structure has been identified as a source of discontent among owner/managers in occupational health and safety administration in the country. Secondly, government's commitment to high health and safety standards on construction sites is undesirably low. Thirdly, the absence of a legal basis that will ensure the active participation of stakeholders particularly, consultants, clients and employees in health and safety issues affecting construction sites lowers the profile of health and safety. Owner/managers' commitments to extended family goals and belief systems relating to witchcraft and sorcery are relevant to the Ghanaian socio-cultural context and impact negatively on health and safety at construction sites.

#### **9.2.4 FULFILMENT OF THE FOURTH OBJECTIVE**

The fourth objective of the research was to make recommendations based on the analysis of the contextual environment of Ghanaian construction SMEs, for improving health and safety management within construction SMEs in Ghana. The recommendations of the research fulfil this objective (presented in section 8.7.1) and are summarised here as follows:

- securing government commitment to good health and safety at construction sites;
- easing SMEs compliance with health and safety regulations;
- incorporating health and safety education in Ghanaian educational system;
- instituting contractor education and training in health and safety ; and
- establishing a construction health and safety research information resource base.

### **9.3 CONTRIBUTIONS OF THE RESEARCH**

There are key contributions that are the outcome of this research. These have not been addressed by other studies. These are presented in the subsections that follow.

### **9.3.1 A CONTRIBUTION TO THEORETICAL UNDERSTANDING OF HEALTH AND SAFETY**

The study has provided insights into how the extended family and religious value systems of Ghana affect attitudes of owner/managers and their employees to health and safety in the country. Also, it has provided insightful understanding of how socio-economic environment impacts on health and safety management within SMEs. These findings of the study have theoretical implications for developing and implementing health and safety interventions and policies. The findings can also form the basis for developing generic guidelines for transferring health and safety best practices of international construction businesses operating in other socio-cultural settings to Ghana and other developing countries.

The interaction of key issues emerging from the study also provides useful important aspects that could be incorporated in health and safety interventions that may be developed in the future to address poor health and safety performance on construction sites. The research has contributed to the cultural and socio-economic influences on health and safety management within construction SMEs through the analyses of the national culture and socio-economic context of Ghana. The research has enabled insights into the subjective perceptions of owner/managers of health and safety to be obtained and, moreover, by adopting multimethodology strategy, the research contributes to present debates of the suitability of multimethodology to small business research.

### **9.3.2 INSIGHTS INTO BARRIERS TO EFFECTIVE HEALTH AND SAFETY MANAGEMENT**

The study has identified key obstacles to effective health and safety management within Ghanaian SMEs thereby contributing to understanding the barriers to health and safety management in the Ghanaian context. Previously, very little has been known of the barriers to health and safety management by Ghanaian construction SMEs. Literature on health and safety management as noted elsewhere in this study, have largely assumed the existence of a stable and enabling environment. However, for a developing country such as Ghana, such a stable and enabling economic conditions and political climate is by far, as the findings of this research suggest, not a true reflection of the state affairs in Ghanaian construction SMEs.



Ineffective prevention services, low socio-economic status of workers, size related constraints, commitments to extended family goals and believes incompatible with the principles of health and safety impact negatively on health and safety management within SMEs. These barriers need to be carefully considered in developing health and safety support for construction SMEs in Ghana.

### **9.3.3 A FRAMEWORK FOR IMPROVING HEALTH AND SAFETY MANAGEMENT WITHIN SMES**

The study has made recommendations for improving health and safety management within construction SMEs in Ghana (section 8.7.1). These recommendations have implications for policy making which affect the construction industry. The key to successful health and safety management within construction SMEs does not only depend on implementing specific health and safety interventions on construction sites but also, creating an enabling environment. The recommendations of the research have accordingly, taken this into account.

## **9.4 LESSONS OF THE RESEARCH**

Ghanaian SMEs need an enabling environment to operate. Such an environment should facilitate effective health and safety management and therefore, lead to improved health and safety performance of the sector. The sections that follow give reflections on the environment of Ghanaian construction SMEs and what stakeholders' can do to bring about a positive change in the health and safety image of the SME sector of the construction industry.

### **9.4.1 THE NEED FOR AN ENABLING ENVIRONMENT WITHIN WHICH SMES CAN MANAGE HEALTH AND SAFETY EFFECTIVELY**

Government policies relating to the private sector have sought to create an enabling environment for SMEs to ensure that SMEs can flourish in an environment with few obstacles to their growth. However, the environment of SMEs is far from being conducive considering the numerous challenges that SMEs in the country face. These challenges also hamper effective management of health and safety within SMEs in the construction sector of the economy.

Economic reforms which essentially, had the aimed of restructuring the economy and emphasising private sector participation in the economy, have left construction SMEs with very little capacity to compete favourably in the job market. The main debilitating factors include: difficulties in accessing finance from formal sources such as merchant banks; ineffectiveness and inefficiency of in-house management practices including health and safety; lack of adequate resources to manage business operations effectively; and, inability to take advantage of newer market niches as a result of government privatisation policies. Constraints posed by the business environment which owner/managers have little control over also negatively affect SMEs. Lack of skilled labour and an underdeveloped local building materials base means construction businesses continue to be heavily dependent on imported materials and foreign technology. They adopt site production methods which pose high risks to site operatives.

Without support to strengthen their human resource position little can be expected by way of significant gains in improved health and safety at construction sites managed by Ghanaian construction SMEs. First, owner/managers need to possess management skills to manage their business organisations in a safe, efficient, and effective manner. The study has revealed lapses in management of SMEs such as ignorance of employers' responsibilities under health and safety laws and failure to comply with Ghana's main occupational health and safety law which covers civil engineering and building construction works. These shortcomings are to some extent, also an indication of the inability of owner/managers to manage their own operations in a safe and healthy manner. Employees in SMEs barely have the requisite skills to safely carry out task assigned to them. The sole means of developing their skills is through apprenticeship training which often, is not completed before the trainee is assigned roles of a fully-fledged qualified tradesman.

### **Employers' role in initiating change**

While the focus of this research is on cultural and socio-economic issues, much needs to be done by SMEs as employers from the corporate social responsibility perspective. It is

necessary that Ghanaian SMEs operate in a socially and environmentally responsible manner. Owner/managers have direct control over all aspects of their businesses' operations and therefore have an important role play in charting the course of their businesses. They need to develop a conscious attitude that will drive their businesses towards meeting corporate social responsibility goals through continually enhancing the quality of life of their employees and their families, the local community and society at large.

### **Government's role in initiating change**

This study has placed emphasises on the urgent need for government to be committed to health, safety and welfare issues affecting construction SMEs. This is particularly important considering the government's medium term development agenda is to move the country to a middle income status by 2015. Improving the quality of work life is an important dimension of this goal. Specific interventions need to be implemented to create an enabling environment for Ghanaian construction SMEs. Adequate investment in health and safety for projects funded by government is one of such interventions that have been discussed and recommended by this research. Additionally, government can facilitate good corporate governance within the sector through better accountability of all government institutions that regulate the activities of SMEs.

### **Role of consultants in the built environment**

Consultants need to demonstrate commitment by resolving health and safety issues affecting projects. Well-designed projects incorporating health and safety aspects and effective supervision should be the key cornerstones of ethics of project consultants. Consultants in Ghana have the more arduous task of ensuring the integrity of projects in terms of health, safety and welfare are not compromised especially that contractors typically, play a minimal role at the design phase of most projects in the country.

Consultants need to conduct risks analysis and method statements for all projects at the design phase. Use of extremely hazardous materials and construction methods that pose uncontrollable and unacceptably high risks to workers and other persons has no room in the future of the construction industry of Ghana. Award of contracts need to take account of the

performance of contractors in terms of quality of works executed, quality of management and health and safety; only by this way that a positive change in the attitudes of many non-performing Ghanaian construction SMEs can be initiated.

### **Role of clients in initiating change**

Clients can influence the health and safety aspects of a project in two ways; ensuring consultants take account of health and safety in the design of a facility and ensuring that the construction of a facility is carried in a safe and healthy manner. Either way has financial implications which a client should understand. Unfortunately, many clients are more concerned about the quality and safety of the final product. Environmental regulations in Ghana are explicit on the role of clients with regards to the environment and some aspects of safety affecting society at large. Unfortunately, the main health and safety regulations in the country do not contain express provisions regarding the role of construction clients.

Notwithstanding the aforementioned shortcomings, clients need to understand the health and safety implications of their projects and make informed decisions about health, safety, welfare and environmental issues affecting their projects much as they are concerned about the quality of their finished product. A 'jury' system currently practiced in the country whereby project consultants meet with their clients and users of the proposed facility is a good forum for clients to address matters relating to health, safety, welfare and environment which affect their proposed project at the design phase. Such a system needs to be extended to the other phases of the execution of projects.

### **The role of enforcing agencies in initiating change**

Government departments and agencies responsible for implementing health and safety standards on construction sites and other workplaces should embark on educational campaigns targeting employers and educational institutions in the country. Students in first and second cycle institutions especially, on the occasion of world health and safety day, should be educated on health and safety issues affecting workplaces.

### **The role of employees of SMEs**

Workers are entitled to work in an environment in which the risks of hazards are properly controlled. Workers need to understand what is expected of them while on site and how they can contribute to a safe and healthy working environment. Workers' for instance, need to understand that their wrong attitudes can pose danger to their health and safety and those of other workers. While personal liberties should be respected, expectations are that they behave in a socially responsible manner while on site. Adhering to basic rules on health and safety and behaving responsibly on site can avert many incidences on site that would otherwise have far reaching consequences in financial and human terms.

### **9.5 LIMITATIONS OF THE RESEARCH**

There were problems encountered in the course of conducting the study at the fieldwork phase which posed serious constraints to the execution of the study. Meeting with owner/managers involved following some protocol which was in the first place time consuming. In the course of scheduling meetings, secretaries to owner/managers could not be bypassed. The realisation dawned on the researcher that many of these secretaries wielded power which cannot be underestimated. They behaved as "gatekeepers" and seeing the owner/manager depended on having a good rapport to the likeness of each secretary. Developing this rapport involved considerable length of time since it was difficult to know in advance the personal likes of each secretary. Secondly, the process involved considerable expenditure of financial resources; by way of lunch packs, tips and more trips to the same office. Thirdly, frustrations, as a result of uncooperative behaviour of some secretaries were annoying and the researcher had to learn to accommodate.

Limitations stemming from the nature of the topic being investigated are acknowledged. There is likelihood that some SMEs which flout health and safety regulations will be reluctant in truthfully answering questions. Although participants were assured that their responses will be treated confidential and, that results of the research will not have any adverse implications on the operations of their businesses, it is difficult to assess the extent to which this allayed their fears. Also, the SMEs that participated in the study could differ in

their opinion on health and safety issues by virtue of their affiliation with the contractors' associations. For instance, they could consider the potential benefits of the research to their associations. This factor could have induced socially desirable responses in addition to respondents conceiving of the research as a means to showcase their concern for the health and safety of their workers. There is therefore the likelihood that the level of health and safety activities/practices of the SMEs may be overstated in this study.

The used of a multimethodology strategy brings to question the issue of the direct effects of one method upon another's observations as a result of subjects in the study being exposed to more than one method. Responses to interview questions in the field studies phase could be affected by their earlier participation in questionnaire survey. The degree to which such methodological effects affected the results of the study and the study's subsequent findings is difficult to assess and thus, must not be assumed to have no influence on the study's outcomes.

## **9.6 RECOMMENDATIONS FOR FUTURE RESEARCH**

One focus of this study is on owner/managers views on health and safety management within their businesses. Time and other resource limitations for a PhD programme was taken into account in deciding on an appropriate design to answer the research questions raised. Consequently, a cross sectional design was adopted for the study. Some of the characteristics of SMEs considered in the study such as turnover, number employees and type of construction activity vary with time. Business growth could necessitate changes in approaches to managing health and safety. This is a gap left unexplored by the present study. It is therefore recommended that future studies adopt a longitudinal design to study individual SMEs over time to assess how growth of SMEs affects their health and safety practices. Such a study will enable valuable insights to be gained on the adoption health and safety measures by various owner/managers at the different stages of the growth process.

The present study did not cover occupational health experts in Ghana. Data on occupational illnesses relating to construction SMEs have not been examined as this did not form part of the study. However, in seeking to find solutions to workplace accidents and ill health, it is

important to understand patterns of ill health within SMEs and the severity of their occurrences. A study in this direction could form the key to designing specific workplace health and safety interventions targeted at minimising the risks of specific health hazards in the SME sector. The incidence of ill health within construction SMEs in Ghana is therefore suggested as a future area of research.

Key issues identified by the present study need to be explored further. The first issue relates to lack of skilled personnel within Ghanaian SMEs. With only lean skilled manpower, the efficient execution of tasks on construction sites become daunting and the likelihood of accidents become higher. Secondly, a study exploring the contribution of construction SMEs to the welfare of their employees and their families is recommended.

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## APPENDICES

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## **Appendix A Cover letters**

### **Letter to heads of organisations**

Dear Sir/Madam,

Re: Research into impact of health and safety management on safety performance of small and medium-sized construction businesses

We are writing to ask you to take part in a research project, which aims to develop appropriate strategies for small construction businesses to improve their health and safety management. A team at the Department of Civil and Building Engineering, Loughborough University led by Professor Alistair Gibb is conducting the research. The objectives of the research are to:

- explore the underlying health and safety issues facing construction SMEs;
- identify measures to control accidents and illnesses on SMEs' sites; and
- develop and validate a strategic approach and practical guide to the management of health and safety within SMEs.

As part of this research we are conducting a survey, which is examining the health and safety practices of small construction businesses. We would be very grateful if you would return the enclosed questionnaire in the reply-paid envelope provided. We would be very happy to supply you with a copy of the results of the paper if you would like them.

Yours faithfully,

Kheni A. Nongiba (Project Researcher).

## Letter to Association of Road Contractors

1 March 2006

The National Chairman,  
Association of Road Contractors-Ghana  
P. O. Box C2823  
Cantonments.  
Accra  
Ghana

Sir/Madam

### **RE: ACESS AND COOPERATION FOR Ph.D FIELDWORK**

This is to confirm that Mr Kheni Nongiba A. is a Ph.D Student studying at the Civil and Building Engineering Department, Loughborough University. He is currently undertaking fieldwork for his thesis. In my capacity as his supervisor, I would like to request you to offer him access to your organisation and the cooperation he needs to administer his questionnaire and interview key people.

Thank you in anticipation.

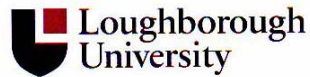
Yours faithfully,

-----  
Alistair G.F. Gibb  
Professor of Construction Engineering Management  
Loughborough University

## Letter to Association of Building and Civil Engineering Contractors of Ghana

Department of Civil and Building Engineering  
Loughborough University Leicestershire LE11 3TU UK  
Switchboard: +44 (0)1509 263171 Department: +44 (0)1509 222884

The National Chairman  
Building Contractors Association-Ghana  
P.M.B  
Accra  
Ghana



Direct Line: (01509) 223097  
Fax: (01509) 223945  
E-mail: a.g.gibb@lboro.ac.uk

1 March 2006

Dear Sir/Madam

### RE: ACCESS AND COOPERATION FOR PH.D FIELDWORK

This is to confirm that Mr Kheni Nongiba A. is a Ph.D Student studying at the Civil and Building Engineering Department, Loughborough University. He is currently undertaking fieldwork for his thesis. In my capacity as his supervisor, I would like to request you to offer him access to your organisation and the cooperation he needs to administer his questionnaire and interview key people.

Thank you in anticipation.

Yours faithfully

A handwritten signature in black ink, appearing to read 'A.G. Gibb'.

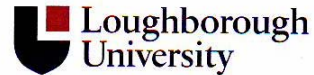
**Alistair G.F. Gibb**  
**Professor of Construction Engineering Management**  
**Loughborough University**



## Letter to contractors in the study regions

Department of Civil and Building Engineering  
Loughborough University Leicestershire LE11 3TU UK  
Switchboard: +44 (0)1509 263171 Department: +44 (0)1509 222884

TO WHOM IT MAY CONCERN



Direct Line: (01509) 223097  
Fax: (01509) 223945  
E-mail: a.g.gibb@lboro.ac.uk

1 March 2006

Dear Sir/Madam

**RE: ACCESS AND COOPERATION FOR PH.D FIELDWORK**

This is to confirm that Mr Kheni Nongiba A. is a Ph.D Student studying at the Civil and Building Engineering Department, Loughborough University. He is currently undertaking fieldwork for his thesis. In my capacity as his supervisor, I would like to request you to offer him access to your organisation and the cooperation he needs to administer his questionnaire and interview key people.

Thank you in anticipation.

Yours faithfully

A handwritten signature in black ink, appearing to read 'A.G. Gibb'.

**Alistair G.F. Gibb**  
**Professor of Construction Engineering Management**  
**Loughborough University**



Letter from headquarters of ABCECG to contractors in the study regions



**ASSOCIATION OF BUILDING AND CIVIL ENGINEERING  
CONTRACTORS OF GHANA**

**(ABCECG)**

HEAD OFFICE  
Accra  
P. O. Box 14293 GPO, Accra  
Tel: 233-021-300722  
e-mail: abccg2002@yahoo.com



REGIONAL OFFICE:

P. O. Box.....

Tel:.....

Date: 20<sup>TH</sup> June 2006

Our Ref: ABCECG/HQ/C.9/VOL.1

Your Ref:.....

ALL REGIONAL CHAIRMEN  
A. B. C. E. C. G

Dear Sir/Madam,

**PROJECT RESEARCH WORK**

Mr. Kheni Nongiba is a PHD Student from the Civil and Building Engineering Department of Loughborough University in U.K.

He is currently in the country to collect data for his project work.

I humbly request that you assist him to reach out to as many contractors as he may require to administer his questionnaire for his project work.

Thank you,

Yours faithfully,

**SAMUEL OBENG  
NATIONAL PRESIDENT**

## Appendix B Stamped list of regional executives of ASROC

### REGIONAL EXECUTIVES

1.	MR. A.B.ASARE	M.D. QUBIAS LTD	GREATER ACCRA REGIONAL CHAIRMAN TEL: 021-229654
2.	ALHAJI S. SOALEY	M.D. MIDJIMATA TRAD. & CONST. LTD	VOLTA REGIONAL CHAIRMAN, ACCRA TEL: 021-226541
3.	MR. E. NTOW KISSIEDU	M.D WAYES & LANES LTD	EASTERN REGIONAL CHAIRMAN, KOFORIDUA TEL: 081-21464/22397
4.	MR. K. GHARTEY SAM	M.D BROSAM LTD	CENTRAL REGIONAL CHAIRMAN, WINNEBA TEL: 0432-22428
5.	MR. S.K. ADDISON	M.D. AFADZI COST. WKS LTD	WESTERN REGIONAL CHAIRMAN, TAKORADI TEL: 031-21330
6.	MR. B.K. ARTHUR	M.D KNATTO COMPLEX LTD	ASHANTI REGIONAL CHAIRMAN, KUMASI TEL: 051-24006/23766
7.	MR. JOSEPH ADOM	M.D. J. ADOM LTD	BRONG AHAFO REGIONAL CHAIRMAN, SUNYANI TEL: 061-23533/0244- 808552
8.	ALHAJI MALIK ISAHAKU	M.D MALLAM ISSA ISHAKU & BROTHERS LTD	UPPER WEST REGIONAL CHAIRMAN, TEL: 0756-22072/ 22348/22009 021-763137/0244-352770
9.	MR. EDWARD GHANEM	M.D GHAMINI ENT. LTD	UPPER EAST REGIONAL CHAIRMAN, BOLGATANGA TEL: 072-23411/020- 8153430
10.	ALHAJI IBRAHIMA SULEIMANA MAHAMA	M.D SAVANA LIMITED	NORTHERN REGIONAL CHAIRMAN, TAMALE TEL: 071-22318/020-816 0568

ASSOC OF ROAD CONTRACTORS-GHANA  


## **Appendix C Interview guides**

### **Interview guide for key informants within institutions responsible for health and safety**

The purpose of the interview is to obtain your opinion on how you manage construction site health and safety and how health and safety performance can be continuously improved. The interview is estimated to last about 45 minutes.

Can I first of all assure you that data obtained through the interview and health and any documentations obtained from you will be treated confidential and that no records kept will bear your company's name. I would also like to obtain your permission to record the interview using a tape recorder

#### QUESTIONS

- 1.0 Can you please tell me about your organisation?
- 1.1 What are the problems if any, do your organisation face in carrying out its functions?
- 2.0 Can you please comment on the management of occupational health and safety in Ghana?
- 3.0 What is the role of your organisation in the management of occupational health and safety in this country?
- 4.0 Can please comment on the health and safety of construction sites?
- 5.0 What problems do your organisation face in implementing health and safety standards on construction sites safety?

What suggestions do you have for improving health and safety performance of small contractors?

Is there anything that I might not have covered in my questions which



you would like to talk about?

Is there anything you would like to ask me?

## CONCLUSION

I wish to thank you for the insights I have gained from your rich experience and for taking some time off your busy schedule in order to make this meeting possible. I hope you would accord me the same opportunity when the need arises again.

**Interview guide for owner/managers’ interview**

The purpose of the interview is to obtain your opinion on how you manage construction site health and safety and how health and safety performance can be continuously improved. The interview is estimated to last about 45 minutes.

Can I first of all assure you that data obtained through the interview and health and any documentations obtained from you will be treated confidential and that no records kept will bear your company’s name. I would also like to obtain your permission to record the interview using a tape recorder

QUESTIONS

**PART 1 PROFILE OF OWNER/MANAGER’S PROFILE**

- 1.0 Can you please give me your personal particulars?
- 1.1 Name.....
- Sex.....
- Level of education.....
- 1.4 Religion.....
- 1.5 Employment history.....

**PART 2 COMPANY CHARACTERISTICS**

Can you please tell me about your company?  
Can you tell me a bit more in detail why you started a construction business?

**PART 3 HEALTH AND SAFETY MANAGEMENT**

- 1.0 How do you manage the health and safety aspects of your works?
  - 1.1 What do you think are the most important ways to ensure safe and healthy sites?
  - 1.2 How do you train your workers in health and safety?
- 2.0 What are your company’s motivations for managing health and safety?
- 3.0 What are the problems if any; you face in the management of health and safety?
- 4.0 Can you please comment on your accident statistics over the last five years?

- What major incident occurred on you site over this period?  
How has that changed your way of managing health and safety on the site?  
What are your achievements in health and safety over this period?  
What underlies these achievements in health and safety?
- 5.0 How can you ensure your performance in health and safety continues to improve or at least sustained?
- 6.0 What are they health and safety challenges working on your own site as against working as a subcontractor under a principal contractor?
- 7.0 How do you incorporate health and safety in your response to tenders?
- 8.0 If your company is awarded a contract, how do you go about health and safety?
- 9.0 How do small contractors compare with large contractors in terms of health and safety?
- How is cooperation between principal contractors and subcontractors enhanced or maintained?
- How has government affected your business operations?  
How has it influenced health and safety?  
In what way (s) can government help in health and safety
- 11.0 What are the drivers to improving health and safety on construction sites in this country?
- 12.0 What advice would you give to local contractors wanting to improve their health and safety performance?

13.0 Is there anything that I might not have covered in my questions, which you would like to talk about?

14.0 Is there anything you would like to ask me?

## CONCLUSION

I wish to thank you for the insights I have gained from your rich experience and for taking some time off your busy schedule in order to make this meeting possible. I hope you would accord me the same opportunity when the need arises again.

## Appendix D Questionnaires

### Questionnaire survey



Department of Civil and Building Engineering

#### ASSESSING HEALTH AND SAFETY MANAGEMENT PRACTICES OF CONSTRUCTION BUSINESSES IN GHANA

##### SECTION A – YOUR PARTICULARS AND GENERAL INFORMATION

**Please enter your name, position and the details of your organisation.**

**All responses will be confidential and will not be connected in any way to yourself or your organisation**

.

<b>Name</b>	
<b>Position</b>	
<b>Organisation</b>	
<b>Experience (Years)</b>	
<b>Telephone</b>	
<b>Postal Address</b>	

**Q1: What type of construction works does your company undertake? (Please enter approximate percentage %).**

Type of construction work	Approximate percentage
Civil engineering construction	
Building construction	
Other Please state	

**Q2: How many employees are there in your company?** *(Please enter the numbers).*

	Office staff		Site staff	
	Male	Female	Male	Female
Full time				
Part time				
Total				

**Q3: When was your company established?** *(Please write in the box)*

**Q4: What contractor classification does your company belong to?** *(Please write in the box)*

**Q5: What was your company's approximate annual turnover for the last full financial year?** *(Please tick)*

More than 100 billion cedis	<input type="checkbox"/>	More than 500 million cedis but not exceeding 1 billion cedis	<input type="checkbox"/>
More than 50 billion cedis but not exceeding 100 billion cedis	<input type="checkbox"/>	More than 100 million cedis but not exceeding 500 million cedis	<input type="checkbox"/>
More than 1 billion cedis but not exceeding 50 billion cedis	<input type="checkbox"/>	Less than 100 million cedis	<input type="checkbox"/>

**Q6: Which of the following associations does your company belong?** *(Please tick all that apply)*

Association of Road Contractors-Ghana	<input type="checkbox"/>
Building and Civil Engineering Contractors of Ghana	<input type="checkbox"/>
Ghana Electrical Contractors Association	<input type="checkbox"/>
None	<input type="checkbox"/>
Other (please specify)	

#### SECTION B — HEALTH AND SAFETY PROCEDURES

**Q7: Which of the following statements apply to your organisation in relation to health and safety?**

*(Please tick or write)*

We have no specific budget for health and safety	<input type="checkbox"/>	
We have a health and safety budget	<input type="checkbox"/>	Please state budget amount in 2005

**Q8: In your opinion, how well do your procedures meet the requirements of the following? (Please tick)**

Requirement	Completely	In part	Not at all	Do not know
Health, safety and welfare provisions in conditions of contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health, safety and welfare provisions in Labour Act, 2003	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health, safety and welfare provisions in Factories, Offices and Shops Act, 1970	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health, safety and welfare provisions in Workmen's Compensation Law, 1987	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q9: If a serious accident happens on your site which institutions will you report to? (Please tick)**

Factory Inspectorate Department	<input type="checkbox"/>
Labour Department	<input type="checkbox"/>
Police Motor Traffic and Transport Unit (MTTU)	<input type="checkbox"/>
None	<input type="checkbox"/>
Other (please specify)	

**Q10: How many accidents have occurred in your business in the year 2005? (Please write in or tick the cells below)**

Severity of injury	Figure	Do not know
Minor injuries requiring less than one day off work		<input type="checkbox"/>
Injuries requiring one to three days off work		<input type="checkbox"/>
Four or more days off work including strains, sprains, lacerations etc resulting in four or more days off work		<input type="checkbox"/>
Fatal injuries		<input type="checkbox"/>

**Q11: Please indicate the extent to which your company registers its construction sites with the Factories Inspectorate Department? (Please tick)**

All project sites are registered	<input type="checkbox"/>	Some project sites are registered	<input type="checkbox"/>
Most of our project sites are registered	<input type="checkbox"/>	Non of the sites are registered	<input type="checkbox"/>

**Q12: If you register some of your projects as indicated in question eleven (Q11) please explain why you do so.**

**Q13: We are interested in knowing the processes you have in place for managing health and safety.**  
*(Please indicate by ticking the relevant cells if you carry out the procedures stated below)*

Company commitment			
Formal health and safety policy	<input type="checkbox"/>	Procedures for investigating accidents	<input type="checkbox"/>
Designated safety person	<input type="checkbox"/>	Procedures for reporting accidents	<input type="checkbox"/>
Using outside health and safety consultants	<input type="checkbox"/>	Provision of drinking water on site	<input type="checkbox"/>
Provision of canteen service on site	<input type="checkbox"/>	Provision of cloak and toilet facilities on site	<input type="checkbox"/>
Provision of first aid box	<input type="checkbox"/>	Provision of personal protective equipment	<input type="checkbox"/>
Worker consultation and participation			
Our workers participate in hazard identification on sites	<input type="checkbox"/>	We consult trade union representatives on health and safety matters	<input type="checkbox"/>
We reward workers who demonstrate exemplary safe behaviour on site	<input type="checkbox"/>	We ask workers for their ideas on health and safety matters	<input type="checkbox"/>
Communication			
Using health and safety posters	<input type="checkbox"/>	Networking with other companies/institutions	<input type="checkbox"/>
Discussing health and safety during site meetings	<input type="checkbox"/>	Communicating health and safety performance to employees	<input type="checkbox"/>
Verbal communication with operatives during site tours	<input type="checkbox"/>	Communicating health and safety through company newsletter	<input type="checkbox"/>
Health and safety planning			
We obtain a labour certificate for every contract	<input type="checkbox"/>	Document method statements	<input type="checkbox"/>
Document risk assessments	<input type="checkbox"/>	Pricing health and safety in preliminaries	<input type="checkbox"/>
Identification of hazards on sites before work commences	<input type="checkbox"/>	Disciplinary measures to correct wrong behaviours relating to health and safety	<input type="checkbox"/>
Insurance cover for sites	<input type="checkbox"/>	Ensuring adequate welfare provisions on site	<input type="checkbox"/>
Education and training			
Site inductions for operatives	<input type="checkbox"/>	Toolbox talks	<input type="checkbox"/>
Planned health and safety training for supervisors and/ or senior management	<input type="checkbox"/>	Planned health and safety training of operatives - first aid, manual lifting etc	<input type="checkbox"/>
Monitoring and review			
Setting health and safety performance targets	<input type="checkbox"/>	Carrying out site inspections	<input type="checkbox"/>



**Q14: What difficulties do you face in the management of construction site health and safety? (Please use a separate sheet if necessary)**

--

**Q15: What are your suggestions for helping contractors to manage construction site health and safety more effectively to minimise the incidence of ill health and accidents on construction sites (Please use a separate sheet if necessary)**

--

**Q16: Does your company have a health and safety policy?**

No	<input type="checkbox"/>
Yes	<input type="checkbox"/>

**If you answered yes to question 16 (Q16) please we would be grateful if a copy could be returned with the completed questionnaire.**

**Thank you very much for your co-operation**

For further queries please contact:

**Kheni Nongiba Alkanam**

**Department of Civil and Building Engineering**

**Loughborough University**

**Leicestershire**

**LE11 3TU**

**UK.**

Tel +447891865932

Email: [n.a.kheni@lboro.ac.uk](mailto:n.a.kheni@lboro.ac.uk)

## **Questionnaire for stakeholders' validation of recommendations of the research**

Dear Sir/Madam,

Re: Evaluation report

We are writing to thank you for participating in the research project conducted by Loughborough University on health and safety management within the construction industry of Ghana, which aims at developing strategies for small construction businesses to improve health and safety management. We would be very grateful if you could take some time off your busy schedule to evaluate the study's recommendations on the following dimensions:

- justification of the suggestions;
- practicality of the suggestions;
- the potential of the suggestions to contribute to improved health and safety standards on construction sites;
- problems in implementing the suggestions; and
- ease of implementation of the suggestion.

Please include any additional suggestions and comments you wish to make in the space provided at the end of the questions.

Yours faithfully,

Kheni A. Nongiba (Project Researcher).

(26<sup>th</sup> March 2007)

POLICY ENVIRONMENT	
1.0 The study suggests school curricula at the tertiary level to include health, safety, welfare and related issues at workplaces	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
2.0 It suggested that sustainable vocational skills training be carried by the country's polytechnics and technical institutes for craftsmen in industry to ensure they are competent enough to carry out tasks	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>

POLICY ENVIRONMENT	
3.0 The study suggests 0.5% to 1% of contract sum be provided for health and safety items such as health and safety training on site, PPE, first aid and safety inspections for all public projects in the country	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
4.0 The study suggests that the number of government departments responsible for implementing health and safety standards at workplaces be reduced to one to enable employers to comply with health an safety regulations of the country with greater ease.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>

POLICY ENVIRONMENT	
5.0 It is suggested that specific regulations be developed for the construction sector because of the particular characteristics of the sector	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
6.0 It is suggested that Ghana adopts national occupational health and safety policy in line with ILO Convention No. 155	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>

NATIONAL INSTITUTIONAL STRUCTURE FOR THE IMPLEMENTATION OF OCCUPATIONAL HEALTH AND SAFETY	
1.0 It is suggested that a law defining mechanisms of funding for the Factory Inspectorate Department be enforced to help overcome the department's over dependence on subvention which is inadequate.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
2.0 It is suggested that membership of national tender boards, regional tender boards, district tender boards and tender boards of quasi-government institutions should include Labour Department and Factory Inspectorate Department.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>

NATIONAL INSTITUTIONAL STRUCTURE FOR THE IMPLEMENTATION OF OCCUPATIONAL HEALTH AND SAFETY	
3.0 It is suggested that a national constructions skills board be established with the responsibility of developing and running vocational skills training programmes for the construction sector.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
4.0 It is suggested that annual health and safety awards be introduced for the construction sector with award categories for large construction businesses and SMEs.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
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The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>

NATIONAL INSTITUTIONAL STRUCTURE FOR THE IMPLEMENTATION OF OCCUPATIONAL HEALTH AND SAFETY	
5.0 It is suggested that implementation of health and safety standards by enforcing institutions should focus on contractor education and using cultural values such as the extended family to foster health, safety and welfare at the workplace rather than stringent inspection regimes and fines.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
6.0 It is suggested that simple guidance information on occupational health and safety law in Ghana which is easy to understand and free of legal and technical jargons be written for directors and managers of businesses in Ghana	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>



HEALTH AND SAFETY AND PLANNING AND EXECUTION OF CONSTRUCTION PROJECTS	
1.0 The study suggests a project safety officer be appointed for large public projects (over 10 million Ghanaian New cedis)	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
2.0 A need exist for simple guidance information on health and safety. It is therefore suggested that a practical guide on health and safety management of construction sites be written specifically for owner/managers and senior site management staff of construction SMEs in the country.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
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<i>Practicality of suggestion</i>	
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The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>

HEALTH AND SAFETY AND PLANNING AND EXECUTION OF CONSTRUCTION PROJECTS	
3.0 The study suggests the cost of implementing health and safety as well as labour standards should be identified within preliminaries and accommodated within prime cost items in bills of quantities.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
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The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
4.0 It is suggested that the Factory Inspectorate Department as the lead partner works closely with other institutions to set up a databank on occupational health and safety in the country including the construction sector	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
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<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
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HEALTH AND SAFETY AND PLANNING AND EXECUTION OF CONSTRUCTION PROJECTS	
5.0 Hazard identification by contractor's site management staff should be carried out and a report written to guide further action. This is to make formal, the rather informal hazard identification method adopted by most site management staff of SMEs in the country.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
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Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
6.0 The study also suggest that all contractors register their full time staff and temporary staff required for the full duration of a project under the National Health Insurance Scheme	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
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<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>

### Additional comments

Please provide any additional comments you may have in the space provided below (attach any extra sheets that may be used)

## **Questionnaire for owner/managers' validation of recommendations of the research**

Dear Sir/Madam,

### **Re: Evaluation report**

We are writing to thank you for participating in the research project conducted by Loughborough University on health and safety management within the construction industry of Ghana, which aims at developing strategies for small construction businesses to improve health and safety management. We would be very grateful if you could take some time off your busy schedule to evaluate the study's recommendations on the following dimensions:

1. justification of the suggestions;
2. practicality of the suggestions;
3. the potential of the suggestions to contribute to improved health and safety standards on construction sites;
4. problems in implementing the suggestions; and
  - 5. ease of implementation of the suggestion.

Please include any additional suggestions and comments you wish to make in the space provided at the end of the questions.

Yours faithfully,

Kheni A. Nongiba (Project Researcher).

(26<sup>th</sup> March 2007)

HEALTH AND SAFETY AND PLANNING AND EXECUTION OF CONSTRUCTION PROJECTS	
1.0 The study suggests a project safety officer be appointed for large public projects (over 10 million Ghanaian New cedis)	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
2.0 A need exist for simple guidance information on health and safety. It is therefore suggested that a practical guide on health and safety management of construction sites be written specifically for owner/managers and senior site management staff of construction SMEs in the country.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
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Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>

HEALTH AND SAFETY AND PLANNING AND EXECUTION OF CONSTRUCTION PROJECTS	
3.0 The study suggests the cost of implementing health and safety as well as labour standards should be identified within preliminaries and accommodated within prime cost items in bills of quantities.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
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<i>Practicality of suggestion</i>	
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The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
4.0 The study suggests involvement of National Health Service staff in worker education on health and safety issues on construction sites and vaccination when and where necessary to encouraged on project sites involving more than 20 employees on site during the construction phase.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but and impractical for Ghana at this time	<input type="checkbox"/>
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The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>

HEALTH AND SAFETY AND PLANNING AND EXECUTION OF CONSTRUCTION PROJECTS	
5.0 Hazard identification by contractor's site management staff should be carried out and a report written to guide further action. This is to make formal, the rather informal hazard identification method adopted by most site management staff of SMEs in the country.	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
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<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
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<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>
6.0 The study also suggest that all contractors register their full time staff and temporary staff required for the full duration of a project under the National Health Insurance Scheme	
<i>Justification of suggestion</i>	
The high cost of implementing this suggestion makes it unjustifiable for Ghana at the moment	<input type="checkbox"/>
The low or no cost of this suggestion makes it justifiable	<input type="checkbox"/>
The benefits to be derived from this suggestion outweigh its costs, and so it is justifiable	<input type="checkbox"/>
<i>Practicality of suggestion</i>	
This suggestion is practical and reasonable	<input type="checkbox"/>
The suggestion is good but impractical for Ghana at this time	<input type="checkbox"/>
<i>Potential of the suggestions to contribute to improved health and safety standards on sites</i>	
The suggestion is good and feasible	<input type="checkbox"/>
The suggestion is not appropriate and therefore not feasible	<input type="checkbox"/>
<i>Problems of implementation of suggestion</i>	
Problems are likely to arise in its implementation	<input type="checkbox"/>
Problems are not likely to arise in its implementation	<input type="checkbox"/>
I am not sure	<input type="checkbox"/>



### Additional comments

Please provide any additional comments you may have in the space provided below (attach any extra sheets that may be used)

## Appendix E ASROC training programme in 2006

Course	Category	Duration	Location
Business management and administration	Top management	5 days	Accra
Quality control	Top management	5 days	Accra
Environmental and social issues	Top and middle management	4 days	Accra
Construction management	Top and middle management	1-2 weeks	Accra
Site supervision	Middle management	1-2 days	Accra
Survey	Middle management	1-2 weeks	Accra
Computer aided design	Middle management	1-2 weeks	Accra
Equipment management system	Middle management	1-2 weeks	Accra
Pricing and tendering	Middle management	1-2 weeks	Accra
Works methods and principles	Skilled persons	1-2 weeks	Accra
Maintenance of equipment	Skilled persons	1-2 weeks	Accra
Equipment operation	Operators/Foremen	1-2 weeks	Accra
All courses include guidelines on safety and HIV/AIDS			

Source: ASROC Newsletter (2005)

**Appendix F Comments on the recommendations of the research**

**CONSTRUCTION SOLUTIONS CONSULT**

ARCHITECTS, ENGINEERS, PLANNERS AND SURVEYORS  
P. O. BOX 474, TAMALE, NR

Your Ref:.....

Our Ref: .....

1<sup>st</sup> October, 2007

Dear Mr. Kheni,

**EVALUATION REPORT:**

**RESEARCH ON SAFETY MANAGEMENT WITHIN THE CONSTRUCTION INDUSTRIES IN  
GHANA**

This is one sector within the construction industry that needs urgent attention here in Ghana. In this year (2007) alone, several deaths has occurred some of which could have been prevented. We are therefore grateful that you have taken the pain to research on this very worrying issue and identifying us to contribute.

I agreed with all your findings. I however wish to mention that consultants have the fear for loosing the job because of the competitive nature in securing jobs; safety and other related items are eliminated resulting to a more competitive price, but at the end creating accidents with adverse effects. The fear however for non-performing contractors and contractors absconding funds has rather made the industry to concentrate on performance bound and advance payment guarantee. If health and safety for workmen was paramount, insurance for workmen and other safety measurement should have been insured together with the performance bound and advance payment guarantee before commencement of any work.

I therefore wish to add that Insurance for workmen and other safety measurement should be calculated and a percentage allocated in the summary sheet. This will ensure that workmen are safe at site.

I wish you success in your studies.

Thank you.



A.A. ADAMS

# DUAD CONSULT LIMITED

ARCHITECTS, ENGINEERS, PLANNERS AND SURVEYORS  
P.O. BOX TL845, TAMALE

20<sup>TH</sup> SEPTEMBER, 2007

Dear Kheni A. Nongiba,

**RE: EVALUATION REPORT**

Thank you very much for identifying the above mentioned Company to participate to your research work.

I agree with your report but a few observations.

On National Institutional Structure for the implementation of occupational health and safety

Item 2.0 safety inspectorate department is suitable than the Factory Inspectorate Department. If additional proposal be made to change the name to function as mentioned

On Health, Safety, Panning and Execution of Construction Projects.

Amount specified will mean that only larger contracts would require the presence of safety officers. I therefore suggest GH¢300,000.00 be proposed or depending on the complex city and nature of the project.

I strongly support item 3.0 On Health, Safety, Panning and Execution of Construction Projects.

I wish you success in your research work.

Thank you.



M. Dauda  
For: DUAD CONSULT LTD.



# WINIMAN INVESTMENT VENTURES

(GENERAL CONSTRUCTION, GENERAL SUPPLIES & GENERAL MERCHANTS)

**BANKERS:**

Agric Dev, Bank, Bawku

Our Ref.....

Your Ref.....

P. O. Box 269

BAWKU - UE/R

Ghana. W/Africa

Tel: 0243 571323

2<sup>nd</sup> October, 2007

Dear Researcher,

**RE: EVALUATION REPORT**

Thanks so much for making us part of your research work.

Few alternative statements on your findings we observed:

- On Policy Environment 1.0, we suggest that school curricular at the tertiary level in the field of manufacturing and construction related studies to include welfare, health and safety management at work place.
- 3.0 specific regulations be developed by Construction related Ministries for her sector because of its peculiar characteristics. Handout be issued together with certificate of classification.
- On 4.0 because it will be a nationwide exercise and cutting across sectors, funding is likely to be the problem.

In addition, regular checks by Labor and Factorate (Safety) Inspectorate

Department to on going Construction sites to ensure implementation of item 3.0

On Health, Safety, Panning and Execution of Construction Projects.

I wish you good luck in your studies.

Sincerely yours



James Anabah

(Managing Director)



## TIME HEALS ENTERPRISE LTD.

(CIVIL & BUILDING CONTRACTORS, SUPPLIERS OF FOODSTUFF, STATIONERY,  
BUILDING MATERIALS & GENERAL MERCHANTS)

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Bawku - UE/R  
Ghana

**BANKERS:**  
GHANA COMMERCIAL BANK, BAWKU  
AGRIC. DEVELOPMENT BANK, BAWKU

Tel: 0743 - 22668  
Mobile: 0244-764582

SEPTEMBER 30, 2007

Dear Mr. Kheni,

### **OBSERVATION TO EVALUATION REPORT**

We are grateful for your research into safety management within the construction industry of Ghana. It is a big worry that preventable accidents occur at sites causing casualties and pain to innocent workers.

I agree to all your research proposed findings and hope that this document be made available upon completion to appropriate authorities for their necessary action.

In addition, safety officers on "large size public projects" must undergo orientation by Labor and Factory Inspectorate Departments before commencement of the works.

Thank you.

STEPHEN DINKO  
(Managing Director)

## Appendix G List of Publications

- Kheni, N. A., Dainty, A. R. J. and Gibb, A. G. F. 2005. Health and safety management practices of small subcontractors. In: *Twenty First Annual Conference of the Association of Researchers in Construction Management* (edited by Khosrowshahi, F.). ARCOM, Association of Researchers in Construction Management, London, UK, 105-114.
- Kheni, N. A. and Gibb, A. G. F. 2006. Updating the construction (Design and Management) Regulations. In: *NexCon-Next Generation Construction Summit: Defining the New Critical Path*. Oregon State University, Oregon, USA, 1-9.
- Kheni, N. A., Gibb, A. G. F. and Dainty, A. R. J. 2006a. Health and safety management practices of small and medium-sized construction businesses In: *Global Unity for Safety and Health in Construction, Proceedings of CIB W99 International Conference* (edited by Fang, D., Choudry, M. and Hinze, J.). Tsinghua University Press, Beijing, China, 91-101.
- Kheni, N. A., Gibb, A. G. F. and Dainty, A. R. J. 2006b. The management of construction site health and safety by small and medium-sized construction businesses in developing countries: A Ghana case study. In: *Proceedings of the 22<sup>nd</sup> Annual Conference of the Association Researches in Construction Management* (edited by Boyd, D.). ARCOM, Association of Researchers in Construction Management, Birmingham, UK, 969-978.
- Kheni, N. A., Dainty, A. R. J. and Gibb, A. G. F. 2007. Influence of political and socio-cultural environments on health and safety management within SMEs: A Ghana case study. In: *Proceedings of the Twenty-Third Annual Conference of Association of Researchers in Construction Management* (edited by Boyd, D.) **Volume 1**. Association of Researchers in Construction Management, Belfast, 159-168.

Kheni, N. A., Gibb, A. G. F. and Dainty, A. R. J. 2007. The health and safety of the family business – H&S in Ghanaian SMEs. International Research Round-up: Health and Safety Part 1. *Construction Information Quarterly* Vol 9. Issue 2.