

Health and Safety Management within Small- and Medium-Sized Enterprises (SMEs) in Developing Countries: Study of Contextual Influences

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Abstract: Considerable attention has been focused on addressing construction health and safety risks in developed economies. Sadly, the same cannot be said of developing countries in Sub-Saharan Africa where accident figures are extremely high. The aim of this study is to examine the influence of the contextual environment within which Ghanaian construction small- and medium-sized enterprises (SMEs) manage occupational health and safety (OH&S). A questionnaire survey was administered to construction SMEs to better understand the health and safety management practices and associated problems followed up by field interviews to explore key issues identified by the survey. The results of the study highlight the institutional structure for implementing OH&S standards, prevailing economic climate, and extended family culture as challenges to the management of OH&S. The study identifies low literacy levels, low socioeconomic status of workers, owner/managers' ignorance of their OH&S responsibilities, commitment to extended family obligations, and ineffective OH&S administration as key factors limiting the capacity of construction SMEs to manage OH&S effectively. The study concludes that effective institutional structure and an enabling socioeconomic environment are needed to enhance the OH&S performance of SMEs and advocates for more proactive OH&S management that take into consideration the work cultures of SMEs.

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Introduction

Ghana has experienced a fast growing economy over the past decade, mainly attributable to a thriving democracy, commitment to good governance and development of the private sector. In line with these policies, government continues to implement macro-economic measures and sector reforms supported by the World Bank and International Monetary Fund. The country has achieved macroeconomic stability and is presently seen as one of the fastest growing economies in sub-Saharan Africa (SSA) (Anaman and Osei-Amponsah 2007). Construction contributes up to 8.8% of the gross domestic product and employs 1.4% of the country's labor force [Ghana Statistical Service (GSS) 2000; International Monetary Fund 2005]. It is worth noting that the sector is a significant source of formal employment. Furthermore, the majority of the working population are increasingly employed in the informal sector as a result of structural adjustment and the economic crisis which began in the 1980s (Overå 2007).

The growth of construction has also led to the increasing severity of risks at construction sites. Accident statistics in Ghana's Workmen's Compensation Law 1987 show that, out of a total of 6,064 accidents reported to the labor department in 1975, construction accounted for 1,108—second only to manufacturing (1,661). This translates into 18% of accidents in the country's occupational setting and over 1,500 accidents per 100,000 workers. The Labour Department-Ghana's (Labour Department 2000) recent analysis of accidents in the country's major industrial occupations reports 1,120 construction accidents, of which 56 were fatal. This translates into a fatality rate of 77.6 per 100,000 workers which is much higher than International Labour Organization's estimates for developing countries (Takala 1999). Only 10% of the reported claims in respect of accidents were settled, amounting to \$150,000.

Finding solutions to construction's poor occupational health and safety (OH&S) performance in Ghana and developing countries facing similar problems requires examination of the internal and external environment of construction businesses. While there is ample evidence confirming the importance of cultural, institutional and socioeconomic environments in organizational management in Ghana and other developing countries (Buame 1996; Kuada 1994), these have been either underdeveloped or absent in the literature pertaining to OH&S (Nuwayhid 2004). In Ghana, the private sector has been the focus of economic policies aimed at creating an enabling environment for private sector-led growth. However, response of small- and medium-sized enterprises (SMEs) which dominate construction to various initiatives aimed at increasing productivity of the sector is slow (Kragelund 2005). Amponsah (2000) argued that a poor institutional environment severely constrains businesses in the country. Evidence suggests that the institutional and legal frameworks for implementing OH&S standards do not facilitate businesses' adoption of mea-

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asures that will minimize the risk of occupational hazards (Tetteh 2003).

These constraints have serious implications for the management of OH&S and therefore form the framework for examining OH&S management within construction SMEs. In the light of the context of the aforementioned external factors, a guiding research question may be stated here as; what are the key contextual influences on OH&S management practices within Ghanaian SMEs? The specific objectives of the study based on guiding research questions developed from literature on OH&S and the context of the study are:

- To describe the OH&S management practices;
- To examine the contextual influences; cultural, institutional, legal and economic on OH&S management;
- To evaluate the OH&S management practices; and
- To make recommendations based on the analysis of the contextual environment, for improving OH&S management.

Health and Safety Management within the Construction Industry in Developing Countries

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). For instance, in Ghana infrastructure like feeder roads, wells for water, small dams, small-scale irrigation, and buildings are constructed using labor based methods (European Commission 1994, p. 51). From OH&S perspective, it may be argued that construction SMEs which dominate the construction sector in Ghana are likely to share similar characteristics with their counterparts in other developing countries. Arguably, the findings of this study are of relevance to other developing countries.

OH&S administration in many developing countries evolved from preindependence colonial regulatory systems and institutions. For instance, the origin of Ghana's current Factories, Offices, and Shops Act 1970 (FOSA) can be traced to the Factories Ordinance of 1952 when Ghana was a British dependency (Visano and Bastine 2003). Regulatory systems and institutions for implementing OH&S standards in many developing countries, particularly SSA, are ineffective in securing protection against a backlash of worsening exposures to hazards from increasingly high rates of industrialization in these countries. Hämmäläinen et al. (2006) argued that rates of accidents will increase in parallel with the pace of industrialization in these countries.

Current general literature on OH&S focus mainly on examination of factors that could lead to high OH&S performance (Fredricks et al. 2002; Hinze and Gambatese 2003; Hinze and Wilson 2000; Huang and Hinze 2006; Jaselskis et al. 1996; Maloney et al. 2007). Equally important are studies dedicated to design issues in relation to OH&S (Coble and Blatter 1999; Gambatese et al. 2005; Seo and Choi 2008). In contrast, literature on OH&S relating to developing countries have highlighted lapses in OH&S administration. For example, Suazo and Jaselskis (1993) have found that Honduran OH&S regulations are comparatively incomprehensive and limited in coverage. More recently, LaDou (2003) reported that OH&S laws cover 10% of working population in developing countries, omitting many high risk sectors such as agriculture, fishing, forestry, and construction. Reasons for poor OH&S performance in developing countries include bureaucracy, time pressures, ineffective institutional structures for implementing OH&S laws and ignorance on the part of workers

about their rights to a decent workplace (Koehn et al. 1995). The influence of cultural practices on OH&S management have been noted by many writers to be relatively stronger in developing countries. However the literature remains unclear about the extent to which these practices facilitate OH&S management or hinder businesses from managing OH&S effectively. For example, Coble and Haupt (1999) argued that cultural influences on OH&S management in developing countries are stronger than in developed countries and advocate integrating positive cultural aspects with OH&S management. Similarly, Peckitt et al. (2002, 2004) found that Caribbean construction workers considered values of freedom, love, and social interactions as having an impact to on-site safety. OH&S management in developing countries is not devoid of religious influences. As Smallwood (2002) found out, there is a strong link between many religions and OH&S. Six other relevant studies are summarized in Table 1. In the main, these studies attribute problems in construction OH&S management within developing countries to economic conditions, methods of working, attitudes, and physical environment. With the exception of the first study, implementation of OH&S programs is rarely documented.

Background to National Occupational Health and Safety Management in Ghana

Ghana lacks unified OH&S legislation for regulating the activities of economic sectors including construction. The FOSA 1970 is applicable to works of civil engineering and construction. Other regulations which border on OH&S and are also applicable to construction include: the Labour Act, Environmental Protection Agency Act, and Mining Regulations. Commenting on the shortcomings of OH&S legislation of Ghana, Tetteh (2003) noted that OH&S statutes evolve without due regard to existing ones, resulting in fragmentation, overlapping areas of jurisdiction and inconsistencies in OH&S laws. Ghana lacks a policy defining the responsibilities of stakeholders, namely, government, employers and employees, without which it would be difficult to secure decent work environment in the SME-dominated informal sector. Many construction SMEs rely on a temporary workforce. Invariably, such workers are illiterate, do not belong to any form of labor unions and are not covered by insurance schemes.

The institutional arrangements for Ghanaian construction OH&S administration involve five ministries which have responsibility for implementing OH&S laws. The Factory Inspectorate Department has sole responsibility for OH&S. Other public departments and agencies with OH&S responsibilities include; the Labour Department, the Environmental Protection Agency, Occupational Health Service Unit, and the Attorney General's Department. Considering the general literature and the context of Ghanaian SMEs a further research question may be stated thus; what critical factors limit the capacity of Ghanaian SMEs to manage their operations in a safe and healthy manner?

Problems in Health and Safety Management within SMEs

Literature comparing OH&S management in small businesses to large businesses suggests that firm size is inversely proportional to the risk of these accidents in industry sectors dominated by SMEs. In construction, McVittie et al. (1997) found that, as business size increases, injury frequency decreases and suggest that better organization, greater awareness of OH&S, higher rates of

Table 1. Descriptive Studies on Safety Management within the Construction Industry in Developing Countries

Writer(s) and year	Summary of research	Key constraints to effective safety and health management
Aksorn and Hadikusumo (2008)	Examined 70 construction projects for the effectiveness of safety programs on construction sites in Thai construction	Safety performance influenced by the nature of the implemented programs. Particular elements of safety programs positively associated with safety performance included: accident investigations; jobsite inspections; job hazard analysis; safety inductions; safety record keeping; safety committees; safety incentives; and, control of subcontractors.
Gibb and Bust (2006)	Examined characteristics of developing countries that impact upon the construction process and the OH&S management.	A number of factors had a negative impact on OH&S management in developing countries: poor infrastructure; communication problems; unregulated practices; adherence to traditional methods of working; nonavailability of construction equipment; extreme weather conditions; and corruption
Mwombeki (2005)	Investigated the implementation of OH&S on construction sites in Tanzania	A majority of contractors, small or large, appeared to understand the importance of OH&S programs but did not implement such programs to improve the poor construction OH&S performance
Peckitt et al. (2004)	Examined the role of societal culture in influencing construction safety culture of U.K. and the Caribbean	Societal cultural biases have an impact on safety culture. Societal orientations to power relationships, time, human relations, materialism and risk taking were found to be important factors influencing safety culture of both countries.
Koehn and Reddy (1999)	Explored safety problems and labor requirements in the construction industry of India	Certain characteristics of construction in developing countries contributed to poor OH&S performance: <ul style="list-style-type: none"> • Availability of cheap labor means workers are compelled to take unacceptable risks because of fear of being dismissed; • Workers cannot afford the cost of proper nutrition because of low wages leading to fatigue and slow rate of work; and • Poor OH&S attitudes.
Haupt and Smallwood (1999)	Examined OH&S practices on community projects in South African construction	OH&S practices are rarely adopted on community projects. Contractors lack OH&S policies and demonstrate no commitment to OH&S issues.

unionization and better training are factors that account for the superior OH&S performance of large businesses. Similarly Byung (1998) found out that fatal and nonfatal injury rates are higher in small construction businesses than larger ones. Differences in resource availability and characteristics that distinguish small businesses from larger ones account for the differences between OH&S management practices of SMEs and large businesses. Walters (2001) and Champoux and Brun (2003) argued that SMEs have fewer resources, making it difficult to manage the OH&S function effectively. Also, SMEs operate under the influence of the external environment which they have little control over. It is thus contended that SMEs, whose primary concern is to survive, are unlikely to give adequate attention to OH&S.

Characteristics of SMEs that influence OH&S management include the number of employees as outlined above, turnover, number of years operating, area of operation and personal characteristics of the owner/manager (Baldock et al. 2005; Champoux and Brun 2003). The study of Baldock et al. (2005) reveals that business size (number of employees and turnover), growth performance, and management experience correlate with propensity to adopt OH&S improvement measures while the study by Champoux and Brun (2003) suggests that the OH&S management structure of SMEs differs across SME size categories. There is a paucity of similar studies dedicated to the construction sector. The only closely related study by Birchall and Finlayson (1996) suggests strong evidence of area of operation as a factor determining the adoption of OH&S management practices; where the busi-

nesses operate in the same industry, there can be marked variation in their OH&S practices depending on the nature of the product or the service they render.

The preceding literature discussions put OH&S management in perspective. A broad range of factors influence OH&S performance of SMEs in developing countries. Clearly, it can be concluded that the external and internal environments of construction SMEs are important facets that inform aspects of their operations. What implications do the contextual environment of Ghanaian construction SMEs have for improving OH&S management within construction SMEs in Ghana?

Methodology

In deciding on the strategy to adopt, the information required to achieve the aforementioned objectives was taken into account. Health and safety management approaches of SMEs and how they may relate to their environment require a set of quantitative data indicating the incidence of OH&S management practices and/or decisions in response to the environment. Furthermore, gaining insights into the subjective experiences of the organizational members, particularly owner/managers, to elaborate on quantitative responses requires a qualitative data set. Therefore, the nature of the information required makes the adoption of multimethods approach most appealing.

Epistemologically, a multimethodological approach enables far richer insights to be gained on the phenomenon (OH&S) under consideration (Denzin 1978). Other writers of research methodology, for example, Mingers (1997), Brewer and Hunter (2006, p. 34), and Curran and Blackburn (2001, pp. 45–46), document the same benefits of multimethods by arguing that this approach offers the opportunity of combining methods with complementary strengths. Abowitz and Toole (2009) documented possible improvements in validity and reliability of data resulting from use of the approach. For the quantitative strand of the study, survey questionnaires were administered to SMEs that belong to two major contractors' associations in Ghana [the Association of Building and Civil Engineering Contractors of Ghana (ABCECG) and the Association of Road Contractors-Ghana (ASROC)] in four regions of the country. The only other contractors' association; the Electrical Contractors Association of Ghana (ECAG) was not included as it has fewer members, many of whom also belong to the aforementioned associations. The qualitative component adopted a naturalistic inquiry with data collected in the natural setting of the study. This involved face-to-face interviews with selected SMEs which participated in the survey, observations of construction processes on project sites, and examining documents relating to OH&S, to understand the survey responses in greater detail.

Definition of SMEs

This study adopts a tighter definition of SMEs suggested by Kheni (2008) and Kheni et al. (2008) as family run domestic contractors with the following thresholds relating to medium-, small-, and microconstruction businesses:

- Medium—between 30 and 199 employees;
- Small—between 10 and 29; and
- Micro—nine or less.

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 10 administrative regions subdivided into 138 distinctive metropolitan, municipal and district assemblies. Construction businesses voluntarily register as members of contractors' associations, namely, the ASROC, the ECAG, and the ABCECG. Membership of ECAG is relatively small compared with the other two associations and many of them are also registered members of ASROC or ABCECG. Contractors registered with the three associations may be categorized as SMEs by the definition adopted by the study. The number of SMEs registered with the two associations stands at 2,629. This number is far less than the number of SMEs registered with the MWH. It is however a better reflection of the number of SMEs actively engaged in construction activity in 2006 (the time the data was gathered) than the population of SMEs registered with government ministries in the country.

Sampling

Government lists of contractors are not regularly updated and therefore limit their use as a sampling frame (Eyiah and Cook 2003). Alternatively, contractor associations' lists are more up to date and therefore were used as the sampling frame. A cluster

sampling technique selected four administrative regions using simple random sampling. Questionnaires were administered to all 1,400 SMEs within the sampled regions constituting over one-half of the population of contractors registered with the two associations nationally. Resource limitations limited the size of selected regions to four. However, the four selected regions fairly represent differences in levels of economic activity and social life across the county. Thus, the sample may be considered representative of these characteristics of the population.

Purposeful sampling technique was used for the field interviews. The aim was to select SMEs considered to have implemented some OH&S practices and others which had not. The two groups had similar organizational characteristics to facilitate comparisons. In all, 26 SMEs participated in the interviews.

Data Collection

The first draft of the questionnaires was discussed with six health and safety experts. They made suggestions on improving the quality of the questionnaire to facilitate response from the survey respondents. The suggestions were incorporated and a second draft of the questionnaires was piloted in a field setting different from the selected administrative regions of the study. Based on the pilot study, the final version of the instrument was developed for the study. The final questionnaire consisted of closed and open-ended questions to examine the significance and incidences of OH&S practices of construction SMEs and the constraints they face in managing OH&S. The data therefore provided descriptive analytic dimensions of OH&S management and as well as problems associated with managing OH&S. The questionnaires were divided into two sections: a first section requested personal information on respondents and a second one elicited response on the OH&S management practices of the owner/manager's business.

The researcher held meetings with national executives of ASROC and ABCECG who subsequently formally introduced the researcher to regional executives of the associations in the selected regions. Arrangements were made by executives of the associations for the researcher to participate in meetings organized at both national and regional levels. These meetings afforded the researcher to personally administer the questionnaires. The researcher also traveled to the offices of some of the respondents who could not be reached at these meetings. Staff of the regional offices of the two aforementioned associations assisted in the collection of the completed questionnaires.

The qualitative data collection involved conversational style semistructured interviews, obtaining OH&S related documentation and observation of workplace relations among workers and work procedures. The interview questions were in three parts; profile of owner/manager; company characteristics, and OH&S. Part Three comprised open questions to gather information on the OH&S approach, challenges to OH&S management, and strategies for improving OH&S.

Survey Results

A total of 1,400 questionnaires were distributed to construction SMEs in the study regions. Four hundred and fifty-five were returned, of which 422 were useable. The response rates for the regions were 31, 22, 33, and 37%. Variations in responses is supported by research suggesting that employers, particularly construction businesses, have shown widespread discontent about the activities of enforcement agencies with the most complaints com-

Table 2. Businesses' Compliance with Relevant OH&S Regulations

	Conditions of contract		Labour Act		FOSA		Workmen's Compensation Act	
	Count	%	Count	%	Count	%	Count	%
Completely	417	98.8	187	44.3	44	10.4	65	15.3
In part	1	0.2	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

ing from the regions with relatively low response rates in this study (Tetteh 2003). The overall response rate was 30%, which is slightly less than the 37–68% reported in studies in the construction sector in similar settings (Aniekwu 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 could have been expected. Comparison of responses with the distribution of construction SMEs nationally and within the sampling frame for members of ASROC indicated micro-, small-, and medium-sized businesses were fairly represented.

Profile of the Businesses

The number of employees ranged from 1 to 197 with the mean number of full time and part time employees of 20 and 15, respectively. There were 114 (28%) micro, 223 (55%) small, and 67 (17%) medium-sized businesses. The majority of the businesses being “small” raises a question of whether size and response rates were positively related which may lead to response bias (Curran and Blackburn 2001, p. 61). However, there is evidence that some micro businesses operating as self-employed persons are reluctant to join contractors' associations (World Bank 1984). Thus, the proportion of micro businesses for the whole country may differ significantly from the survey response and some level of caution needs to be exercised in generalizing the survey findings to the population of SMEs nationally in this respect. “The number of respondents belonging to ABCECG and ASROC were 275 (68%) and 129 (32%), respectively.”

The mean age of the businesses was 21 years with over three-quarters (78%) more than 15 years old. Most of the companies were therefore stable businesses with relatively little threat of exit from the sector.

Overall, the mean percentage of building works undertaken was 62% compared to 37% for civil engineering works. When asked the type of work they carry out, 47 (12%) of the organizations stated they only did civil works and 93 (23%) only building works. The rest specialized 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 of civil works contractors undertake is characteristic of the volume of jobs in the two areas in developing economies (World Bank 1984). A probable explanation of the typical proportion of civil works and building works 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. The financial turnovers of the businesses in 2005 ranged from \$5,000 to \$5 million.

Compliance with Relevant OH&S Regulations

Respondents' opinions on whether they complied with the requirements of relevant OH&S regulations suggest that the FOSA is the least complied with (Table 2). This is an interesting response worth commenting on given that it is the main OH&S law in Ghana. The Factory Inspectorate Department was formerly a unit under the Labour Department and was later transformed into a department. As would be expected, many Ghanaian contractors are therefore aware of the existence and activities of Labour Department which administers the Labour and Workmen's Compensation Acts. Conditions of contract often make specific provisions on OH&S explaining the greatest tendency shown by the respondents to comply with contract conditions on OH&S.

It should be mentioned that the response levels obtained regarding compliance with relevant OH&S regulations may not be a true reflection of the extent of implementation of these OH&S regulations on their sites given that there is some likelihood that they would like to portray a positive image of their businesses. In the light of this, the results should be interpreted as indication of the relative tendencies to comply with the different OH&S regulations.

Health and Safety Management Practices

When asked about their OH&S procedures, over three-quarters of the respondents said they had instituted measures in respect of first aid, portable drinking water, personal protective equipment and labor certificate on their sites. The rather high response to this question is in line with the responses to the question on whether their procedures met the requirements of OH&S provisions in conditions of contract. Public contracts contain clauses in respect of these OH&S items and, in a few cases, they are covered by provisional sums. Two-thirds (65%) also cited insurance cover for project sites as a measure they implemented. 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. Site safety inspections within the businesses surveyed was informal and very common (83%). Notwithstanding the impressive responses on these OH&S practices, contractors under the pressures of competition and desire to maximize profit, may tend to undermine these practices on project sites by pricing these OH&S items unrealistically. Thus, the amounts and types of first aid items, personal protective equipment and other measures may be insufficient.

Other OH&S procedures adopted included: accident reporting (46%); rewards for safe behavior (40%); documentation of method statements (25%); hazard identification (30); OH&S consultants (23); inductions (19%); asking workers for their ideas on OH&S (23%); using OH&S posters (25%); and accident investi-

gations (20%). Conditions of contracts hardly included provisions on these OH&S practices which explains the apparently low response on these items. These responses suggest that few of the businesses adopted OH&S beyond those expressly required by contract conditions. Independent “*t*” tests carried out on three groupings of the sample, namely, region of operation, type of work and SME category, indicated some significant differences in the adoption of OH&S management practices. There was no significant difference across the regions in the adoption of OH&S management practices with the highest *t* value found to be 1.599 at $p=0.111$ compared to a cut off value of $t \geq 2$ for a significant relationship. However, significant differences exist by the SME size categories, namely, micro-, small-, and medium-sized construction businesses (the value of *t* in this case was always more than 2.3 with $p < 0.01$). The interviews corroborated these results with owner/managers of small SMEs, particularly microbusinesses, underestimating the OH&S risks level associated with their operations and tending to overlook OH&S issues. This is evident from the words of one owner/manager of a micro business:

“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).

The above statement contrasts with the description of OH&S activities given by an owner/manager of a medium-sized business thus:

“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 causes 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).

Even when contracts make no provisions for OH&S, some experienced owner/managers of medium-sized firms will implement some OH&S measures. As one interviewee aptly put it, they transfer OH&S measures adopted on projects sites where clients were more willing to pay for good OH&S 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—medium size business).

In this sense, experience gained in contracts where adequate provisions are made for OH&S is a factor that aids owner/managers’ decisions on the implementation of OH&S measures on construction sites where OH&S is excluded in the contract clauses of the project bills of quantities. The above quote appears

to be a goodwill gesture extended to workers on-sites where contract provisions on OH&S are not present even though it is a legal obligation on their part to do so. This is by no means an indication of awareness of responsibilities under OH&S law by owner/managers, but rather a concern experienced owner/managers can have for the OH&S of their site operatives; nurtured, most probably, by lessons learned over the years of operating their businesses. While some inexperienced owner/managers can have similar genuine concern for the OH&S 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.

The adoption of OH&S practices also differed significantly between the construction businesses working mainly in civil engineering and building contractors. The test of significance yielded $t=5.571$, $p=0.01$. A plausible explanation being that many civil engineering contracts are donor sponsored and such projects are expected to meet international OH&S standards as explained by one owner/manager of a civil engineering SME:

“Construction site health and safety is influenced by clients who are committed to high health and safety standards beyond the stipulations of the 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—medium-sized business).

Clients that ensure OH&S standards on their sites meet international labor standards including Department for International Development, Danish Development Agency, World Bank, International Development Association, and clients of high risk sectors such mining as emphasized by one owner/manager:

“Many mining companies in Ghana insist that contractors tendering submit a health and safety policy and procedures they have in place for ensuring construction sites are safe. 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” (Contractor H—small business).

The interviews also provide some evidence on differences in OH&S responsibility across interview participants and this could partly account for the variation in adoption of OH&S management practices revealed by the survey. With the exception of few medium-sized SMEs, responsibility for OH&S in businesses that demonstrated some level of commitment was informal. The owner/managers in these businesses assumed responsibility for OH&S and delegated some responsibilities to key administrative and site personnel. Owner/managers were responsible for purchasing OH&S logistics and related expenditure. Site supervisors or managers were responsible for inductions, accident investigations, accident reporting and implementation of OH&S measures on project sites. 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 OH&S structure of his organization:

“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 ma-

terials 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—microbusiness).

Owner/managers of SMEs which had not put in place similar OH&S measures on the other hand were the sole persons responsible for ensuring that contractual requirements for OH&S 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 OH&S requirements of the contract not complied with and which consultants were likely to query.

The medium-sized SMEs which had OH&S procedures had a relatively complex OH&S structure. The owner/managers delegated some OH&S responsibilities to personnel managers who liaised with site management on OH&S issues such as provision of personal protective equipment, accident reporting and investigation forms, arrangements for OH&S inductions, and health education. The owner/managers in these companies gave final approval of decisions reached on OH&S 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 regulations, especially the Labour Act and Factories, Offices, and Shops Act" (P).

This may be contrasted with 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).

The owner/managers stated lack of resources (109, 26%), lack of commitment on the part of government (9, 2%), lack of guidance information on OH&S (3, 1%), shortage of skilled labor (19, 5%), competition (6, 1%), low levels of literacy (25, 6%), and employees' attitudes to OH&S (28, 7%) as major constraints hindering effective OH&S management. These constraints are amplified by the responses of interview participants on key problems they face in OH&S management. For instance, as can be inferred from the response of one owner/manager below, low literacy levels and ignorance are contributory factors to attitudes which increase the risk of exposure to accidents.

"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 counseling on the site" (D—microbusiness).

Another was ignorant of the fact that the FOSA covered construction works as can be seen from his response below:

"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—small business).

On competition, one owner/manager had this to say about the difficulties Ghanaian construction SMEs face:

"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—medium-sized business).

Additionally, it was apparent from the responses given that OH&S management is not divorced from culture, especially the extended family value system and religious values. Workers are culturally inclined in their attitudes and these are brought to the sites they work in. Many of the shortcomings in OH&S management also relate to the political and sociocultural environments of the national setting in which the businesses operate. Yet, other shortcomings rest with owner/managers' failings to recognize that their activities pose severer health and risks than their viewpoints portray. However, some owner/managers recognize that some work methods on project sites and the characteristics of their workforce pose significant OH&S concerns. The emerging themes based on the analysis of the forgoing results are given in Table 3.

Discussion

Both survey and qualitative results provide evidence of the effect of attitudes, socioeconomic factors and influences which have as their origin the traditional Ghanaian value systems on OH&S management as can be inferred from the summary of themes emerging from the study. These influences, in some ways, impede the effective management of OH&S within Ghanaian construction SMEs. The discussion is presented in sections that address the research questions posed in the introductory section. The first three sections present discussion of the contextual influences on OH&S management in response to the first research question (what are the key contextual influences on OH&S management practices within Ghanaian SMEs?) while a fourth section presents the key constraints limiting the capacity of Ghanaian SMEs to manage their operations in a safe and healthy manner and suggestions for addressing these constraints.

Owner/Managers' Attitudes to Health and Safety

The survey and interview data corroborate evidence of poor compliance with OH&S laws by SMEs and ignorance of owner/managers regarding their responsibilities under the law. Also,

Table 3. Summary of Themes Emerging from the Study

Topical issues	Emerging themes	Evidence
Site OH&S processes	Variability of approaches to OH&S	Client/financiers concern for OH&S Characteristics of SMEs and the differences in measures adopted to mitigate OH&S risks OH&S roles within the SMEs
External environment	Impact of government policy and the state of the economy on the operations of construction SMEs Extent to which values, beliefs, societal norms reinforce or otherwise, owner/managers' perception/intentions on OH&S	Inability of SMEs to expand market Influence of economy on business operations (including OH&S) of SMEs Inadequate support to SMEs Standards of living reflected in workers' poor demand for OH&S Religiosity of OH&S Workers' relationships with one another Extended family system Extended family environment of SMEs Existence of close relationships within SMEs Collectivistic style of life
Internal and external environments of SMEs	Barriers to effectively managing OH&S risks	Benefits deriving from good OH&S are not immediate Government commitment to improving performance of the construction sector Resources available to SMEs State of the economy as an enabler of OH&S management within SMEs

there is evidence which is consistent with the literature findings that the institutional structure for implementing and safety laws exerts little influence on O&S management within SMEs. Very few SMEs report accidents to the appropriate government departments, either because they are confused about which department they should report to or ignorant of their responsibility under the law. Also, no pressure is brought to bear on the businesses to comply with OH&S regulations. A factor contributing to such poor attitudes to OH&S by SMEs is the inadequacies in the OH&S regulations in themselves. While the minister for manpower and development may make regulations to address specific construction hazards and impose duties on project participants, no such regulations have been promulgated. While unified and comprehensive OH&S regulations are sought government, presently the body of regulations relating to construction OH&S is seen as a major weakness of the Ghanaian OH&S management system (Tetteh 2003).

Socioeconomic Influences on Health and Safety within the SMEs

Ghana's economy typifies the state of socioeconomic 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 key reason which frustrate Ghana's economic growth is lack of financial resources and this is directly reflected in business operations, particularly SMEs and the social life of people within the country. The study's results provide evidence of the negative impact the state of the economy has on construction SMEs, a finding which is consistent with the general literature. For instance, Ahasan (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.

Despite the frequent rate of economic 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 Ghana. These obstacles, as the results presented show, have negative implications for OH&S management within Ghanaian construction SMEs. For example, it is clear that construction SMEs face intense competition as a result of the trade liberalization policy of the government which hinders the efficient management of their operations, including OH&S. They are also constrained by limited financial resources, with many of them relying on informal sources of funding at a prohibitive cost. Owner/managers are therefore more concerned about how to allocate their meager resources that will ensure their future survival in the face of these challenges. OH&S will not be allocated its share of resources by SMEs operating under these constraints. This, accords with the general literature that SMEs operate in a competitive environment which could limit their capacity to manage OH&S effectively (Lingard and Holmes 2001). The difficulties faced by Ghanaian SMEs are further compounded by delayed payments and failure of contractor assistance programs (Eyiah and Cook 2003).

The existence of a cheap source of labor, combined with the low socioeconomic status of workers are major obstacles to improving OH&S as this limits workers' capacity to resist working under poor OH&S conditions on-sites as the results of this study portray. Low skill levels coupled with the adoption of labor intensive methods by the construction industry in Ghana and many other developing countries means managing OH&S can be challenging. It is clear that changing the attitudes of construction SMEs must be addressed to ensure workers' rights are not fla-

grantly abused in an industry setting where large numbers of the labor force are unskilled and largely uneducated.

The aforementioned problems affect the progress of construction works in Ghana and indirectly lead to site OH&S problems. For instance, 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. Prevailing economic conditions is also a thriving factor for unofficial payments to public officers; a practice which is least seen, by the average Ghanaian, as disdainful. Research by the Centre for Democratic Development in Ghana suggests corruption in the construction sector of Ghana is condoned by officials of government ministries which oversee the activities of construction businesses [Centre for Democratic Development (CDD)-Ghana 2000].

The results suggest that workers are unlikely to complain about working conditions so long as wages they are entitled to are paid promptly. Although the cost of living in Ghana is minimal, workers' wages/salaries cannot meet the cost of their families' basic needs such as food, education, and health. Like many other developing countries, access to good health facilities in Ghana is difficult because of the limited availability of such health facilities. Many workers can be described as having a low socioeconomic status. On these grounds, a considerable proportion of workers in Ghana are vulnerable with respect to OH&S. Many site workers are content to earn better wages under poor OH&S working conditions and workers' demand for healthier and safer working environments is low. This finding corroborates literature findings which suggest that there is a low level of concern for working conditions in construction in developing countries and this contributes to poor OH&S on construction sites. Koehn and Reddy (1999) argued that workers are often compelled to accept risks, leading to serious accidents on-site.

Influence of Value Systems on Health and Safety Management

The dominance of traditional African religious values in Ghana 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 value systems. The increasingly important role played by chiefs in the administration of justice, the practice 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 literature discussions emphasize the importance of culture in OH&S management although the studies reported fail to specify the nature of the influence culture has on OH&S management. The results of the study provide evidence of culture as a strong shaping force of workplace relations. Also, values which have their origin in traditional religion and extended family systems have, as the study's results suggest, significant influence on attitudes to OH&S risks on construction sites. Owner/managers' perceptions of and attitudes to OH&S are bound together with the extended family system and collectivist view of life characterized by providing for social needs including workers' OH&S. 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. The findings by Smallwood (2002) that there is a link between religious values and OH&S with religious values tending to put emphasis on the

conservation of life and the environment is of particular interest to the context of this study. Values which have their origin in traditional religion are strong determinants shaping health and safety behavior of employees and owner/managers. The results demonstrate that Ghanaian sociocultural values on the one hand support harmonious working relations within construction SMEs that nurture an extended family environment and can therefore be argued to foster a stronger bond between employees and owner/managers. This finding partially accords with the findings of the Smallwood (2002) study. However, on the other hand commitments to extended family obligations can undermine the allocation of resources leading to OH&S not accorded the attention that it ought to deserve. Then, seen from this angle, it may be argued that values affect attitudes and behavior and therefore present certain challenges to the management of OH&S within construction SMEs.

Hofstede (2001, pp. 327–331) argued 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. Traditional African religious values essentially, preach tender values; honesty, kindness, compassion, hardwork, responsibility, and politeness. Relating these to Hofstede's MAS, it can be summed up that the attitudes and behaviors of Ghanaians and for that matter Ghanaian construction workers, is feminine. This is evidenced by older, more experienced workers on construction sites showing a caring and tactful attitude toward their colleagues, especially younger ones. Thus, in a sense, Ghanaian religious values are benignly brought to bear on construction workers' behavior and relationships with their colleagues. Such attitudes are compatible with OH&S principles, as it is the duty of workers to take care of their own OH&S and those of others. These observations accord with findings of studies on the role of culture in OH&S management (Peckitt et al. 2002).

Sociocultural values have some positive impact on workplace relations and could therefore foster discussions on matters relating to OH&S among employees and between employees and owner/managers, particularly when the latter's attitude is inclined toward values aforementioned. While extended family environments within Ghanaian construction SMEs could enhance health and safety communication and participation, the burden imposed by extended family obligations 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 their share of resources. Also, the presence of certain prevailing negative beliefs and practices are counterproductive and incompatible with the principles of OH&S management. These two factors undermine an enabling sociocultural environment conducive to OH&S management within Ghanaian SMEs.

Suggestion for Overcoming Barriers to Effective Health and Safety Management within Ghanaian SMEs

This study highlights key barriers to effective OH&S management within Ghanaian SMEs. Ineffective prevention services, low socioeconomic status of workers, size related constraints, and owner/managers' commitment to extended family goals impact negatively on SMEs' OH&S management. These barriers need to be carefully considered in developing OH&S support for Ghana-

Table 4. Overcoming Barriers to Managing Health and Safety Effectively

Aspects of barrier	Suggestions for overcoming the barrier
Ignorance of owner/managers	Enhancing capacity of SMEs to enable them to manage operations in a safe and healthy manner through contractor education and training. Contractor education should be modeled around the extended family culture as an enabler of OH&S. Practical guidance information on OH&S should be developed and made available to construction SMEs. Guidance material should be easy to understand and free of legal and technical jargon. Guidance should be revised to keep up with revisions of all relevant OH&S laws.
Low levels of competence of workers	Enhancing the competence of workers in construction SMEs by introducing OH&S in the curricula of tertiary education and technical/vocational education and introducing construction training programs accessible to persons without formal educational qualifications. This will complement training in civil engineering and building construction provided by formal educational institutions. Training programs could be run by construction skills training centers at district and regional levels and funded by levies from contractors' certificates.
Commitment of government to improving OH&S performance of the sector	Raising the level of government commitment for OH&S by setting aside a percentage of the contract sum for every project which the government finances as a "OH&S sum." This sum should then be paid to the contractor for implementing specific OH&S measures. This will ensure that contractors get paid for effectively managing OH&S unlike the present system in which price, inclusive of the cost of OH&S is a key determinant of contractor selection. In this latter system, proactive management of OH&S is a disincentive leading to contractors slicing down the prices of bill items relating to OH&S.
Inculcating workers' awareness of their rights with regards to OH&S	Promoting OH&S through campaigns by union bodies such as the Construction and Building Materials Workers Union. Regional unions should organize workers forums to encourage membership of workers' unions and educate workers on their rights to decent working environment.

ian construction SMEs. Suggestions for overcoming these barriers to effective OH&S management are summarized in Table 4. These suggestions have been validated by the SMEs from the study and safety professionals. Full details of the validation are given in Kheni (2008).

Conclusions

The findings of this study have implications for OH&S policy in developing countries. The findings reveal that the OH&S administrative system has minimal impact on the operations of construction SMEs. Standards of living and cultural values have significant impact on SME OH&S management. Although legislation is one effective means of securing compliance with OH&S standards in construction, this aspect seems to have an insignificant impact on SMEs' attitudes. Clearly, this can be seen from the low response regarding compliance with Ghana's main OH&S legislation—FOSA. This calls for both restructuring of, and more resource inputs for existing OH&S institutions. This means the numbers of institutions with responsibility for OH&S must be such as to facilitate ease of compliance and clarity of roles. The OH&S legal framework should be unified, comprehensive, and able to address specific hazards in construction.

Many SMEs obtain jobs as subcontractors where the main contractor is invariably a large foreign firm and in many cases the SME will be expected to operate according to the OH&S management system or OH&S policy of the larger firm. Optimum OH&S on construction sites can result if main contractors can synergize their systems with the work cultures of SMEs operating on their sites since confusion can result from not taking into consideration the SME's work practices.

This research has revealed that low socioeconomic status of workers and cultural values, particularly the extended family system are major obstacles to managing OH&S effectively. Notwithstanding the impact these constraints have on OH&S management, owner/managers' close relationships with their em-

ployees is a significant factor that drives their care for their workers' welfare, OH&S. The adoption of OH&S practices such as delegation of OH&S roles, employee participation in OH&S management and provisions of OH&S resources are more of an outcome of close working relations between owner/managers and their employees rather than fear of being penalized by enforcing agencies.

The role government plays in providing an enabling environment to support the establishment and growth of SMEs has been noted as well as the negative impact of economic policies aimed at enhancing the performance of SMEs in OH&S management. Government's commitment to creating an enabling environment to enhance the performance of construction and to secure economic growth is questioned. In light of this, construction SMEs are likely to continue to face stiffer challenges to their growth in the absence of an enabling business environment and these will have serious repercussions on OH&S management within the sector. An enabling environment which will enhance the development of skills and knowledge is undeniably a major instrument which will enhance OH&S management within Ghanaian SMEs.

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