CIDB PAPER 29

Evaluating management commitment to health and safety in small and medium construction enterprises

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ABSTRACT

Purpose: Construction health and safety (H&S) in small and medium construction enterprises (SMEs) has received little attention in South Africa, in terms of either research or support for preventive initiatives. Previous research suggests that this sector has serious problems exacerbated by limited access to human, economic and technological resources. Moreover it is now recognized that methods developed specifically for large firms cannot necessarily be transferred to smaller and medium firms, hence the need to investigate management commitment to H&S among SMEs.

Methodology: This exploratory study is based on descriptive survey using semi-structured and structured questionnaire, and non-probability sampling to give an overview of the characteristics of H&S commitment and practices in SMEs firms in the South African construction industry. The survey was conducted in Gauteng province in South Africa, which is the economic hub of South Africa. The structured questions were analyzed using Microsoft excel statistical formulae to calculate the mean values of the statements. This resulted in the computation of mean values and ranking of the statements using the mean values obtained.

Findings: The findings indicate 81.25% of the respondents had a tertiary qualification, the result also indicate management commitment to H&S in the small and medium construction enterprises.

Value: The results will be used to make initial evaluation of SME management commitment to H&S and to design and evaluate future interventions and research on key elements/enablers required to improve health and safety performance in SMEs.

Keywords: **Construction Industry; Health and Safety; Management Commitment; Small and Medium**

INTRODUCTION

The construction sector in developing countries plays a significant role in physical development and employment of the otherwise largely unemployed labour force. There are however major challenges to increase the productivity of the sector in developing countries including low levels of macroeconomic performance, limited resources, reliance on institutional structures and procedures largely inherited from developed countries which once ruled them and poor infrastructural

development (Gibb & Bust 2006). In the wake of these challenges, it is not surprising that construction in developing countries contributes a large quota to occupational accidents statistics. In comparison with developed countries, construction sites in developing countries are ten times more dangerous than in developed countries (Hämäläinen *et al.* 2006). The construction industry in South Africa is the third most hazardous industry after agriculture and manufacturing [Construction Industry Development Board (CIDB), 2004].

Small and medium sized businesses dominate the construction industry in many developing countries Kheni *et al.* (2008). These SMEs are constrained by limited resources as well as regulations and procedures which make it difficult to effectively manage the health and safety aspects of their operations. The quality of working conditions needs to be improved particularly for construction (Addo-Abedi, 1999). Gounden (1997) states that, the South African construction industry and especially SMEs have the potential as a driver of economic growth, despite the South African government commitment to improving productivity of the sector being low. Improving the H&S performance of the sector is one means of enhancing the productivity of the construction sector in South Africa, which is dominated by SMEs (Ntsika, 2001).

In addition to the constraints mentioned above, SMEs lack the capacity to undertake large construction projects because contracts are packaged to suit large contractors. In the face of scarce resources and these constraints, many of them are unlikely to commit sufficient amounts of funds and the right types of resources in the management of H&S (CIDB, 2004). Although SMEs possess common features with larger companies, their characteristics and management make them unique.

The National Small Business Act (1996), amended in 2004 defines small contractors as those with a total turnover of between R3m to R6m, a total number of full time paid employees between 20 and 50 and a total gross asset value (fixed property) of between 0.5m to R1m, whereas medium contractors are defined as having a total turnover of between R6m to R26m, total full time paid employees between 50 to 200 and have a total gross asset value (fixed property) of between R1m and R5m.

BACKGROUND TO OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

According to Kheni, *et al.* (2007) the rate of industrialization in developing countries require effective Occupational Health and Safety (OHS) administrative systems to control hazards and to provide decent working environments that meet international standards. High rate of occupational accidents, particularly in construction means developing countries might be poor at managing the risks of hazards at workplaces.

Studies conducted by Peckitt *et al.* (2004); Gibb & Bust (2006) on health and safety (H&S) management in construction in developing countries provide ample evidence of lapses in the management of H&S at construction sites. Their findings revealed weaknesses in occupational health and safety administration, economic conditions, climatic conditions and the characteristics of the construction industry of developing countries influence H&S at construction sites. Also, the effective implementation of H&S programs is absent in most construction businesses in developing countries. Haupt and Smallwood, (1999) indicated that the construction industry in South Africa shares in many of these problems of H&S management. These sentiments provide an avenue through which this study was initiated.

A literature review established elements that are associated with successful health and safety management which are; commitment by management, effective management system, risk management and control of hazards, auditing of both management systems and physical hazards, training and education, communications and consultation (National Occupation Health and Safety Commission (NOSHC, (1999). These and some other identified elements were used to address the research problem.

Health and safety commitment within South African construction SMEs

The Occupational Health and Safety Act (OHSA) 1993 and the Construction Regulations 2003 set out a legal framework for workplace H&S. Specific sections of the Act apply to the development of policies and procedures, and employers' general duty of care, which states that:

"... provide and maintain so far as is practicable for employees a working environment that is safe and without risks to health" (OHSA, 1993 8(1) pp12). Occupational health and safety should be seen as a value and not driven by a legal framework.

Despite isolated reports of improvement, there is very limited commitment to comply with basic requirements, let alone promote a culture of health and safety. Employers view health and safety as a cost in the system. Small contractors can barely maintain tools and regard safety equipment as luxury items. Even where protective clothing and equipment are provided, workers often avoid their use, including the use of safety goggles and masks when working with grinders and asbestos. Aside from the direct compensation and medical costs associated with accidents the costs to the economy are immense and include rework, lost time, damage to plant and equipment, disruption, productivity loss and loss of skills to the economy (CIDB, 2004).

Compliance with construction legislation, codes and standards such as the Construction Regulations (2003) in South Africa and the Construction Design and Management Regulation (2007) in the United Kingdom (U.K), presents significant challenges involving cost, compliance, design and implementation capacity. Clients such as the Department of Public Works (DPW) and consultants agree that implementation would require better understanding on the implications and importance of H&S (CIDB, 2004). These views highlight the importance of evaluating management commitment to H&S in the South African construction industry within SMEs.

PROBLEM STATEMENT

Employees of construction SMEs are exposed to hazards which cannot be ignored, as international funding bodies and some clients of the construction industry demand that SMEs demonstrate corporate social responsibility in respect of a decent working environment and physical environment. The South African government needs to address these issues to increase productivity of the construction sector in line with its growth program. To address these problems and concerns this study aims to determine the following objectives:

- Establish the sample composition of the respondents; and
- Determine commitment of management to health and safety in SMEs.

This paper reports on the findings of an exploratory survey of health and safety commitment conducted among SMEs personnel in-charge of H&S.

RESEARCH METHODOLOGY

A review of the literature led to the identification of available elements to manage a health and safety culture. Seven (7) elements were identified in the plethora of literature available. A descriptive survey method was adopted, which involved the use of a semi-structured and structured questionnaire in an in-depth exploration of the constructs underlying the subject matter of the research. Creswell (1994) describes a survey as a quantitative or numeric description of some fraction of the population – the sample, which enables researchers to generalize their findings from a sample of respondents to a population within the limitations of the sampling method.

A random sampling was used where the researchers selected sample members to conform to some or other criterion in this case contractors. As no sampling frame exists and no parameters are known, probability sampling could not be used. The respondents were involved in construction activities ranging from general contractors, civil contractors, home builders, subcontractors and specialist contractors. Sixteen (16) usable completed questionnaires were gathered from a total of thirty-nine (39) distributed, 41.03% was the response percentage. This sample size was sufficient to meet the statistical test requirements for group statistical testing of an exploratory study. As part of the delimitation process (Creswell, 1994) of this research, the geographical aspect of the sampling limits the generalization of the sample, as the survey was conducted in Gauteng province in South Africa, which is the economic hub of South Africa. Purposive sampling is a non-probability method of sampling it is impossible to evaluate the extent to which such samples are representative of the relevant population (Welman & Kruger, 2001), it also gives the research qualities of a case study (Creswell, 1994). These problems with generalizing from the sample to the whole population of SMEs are limitations of the research design and fully acknowledged in this research. The data was gathered in the month of May 2009.

The structured questions were analyzed using Microsoft excel statistical formulae to calculate the mean values of the statements indicated in Tables 3 to 9. This resulted in the computation of mean values and ranking of the statements using the mean values obtained.

The data was gathered by the intercept method (Cooper & Schindler, 1998) using self-administered questionnaires (Leedy, 1997). The need for content validity was not established as no, pilot study and pre-testing was done on the questionnaire. As the questionnaires were completed anonymously, the collection of the data and the presentation of this report cannot harm the respondents or the organizations in any way.

RESULTS AND DISCUSSION

The sample composition of the respondents

Table 1 Type of organization

Organization type	Respondents	%
General contractor	6	37.5
Sub-contractor	6	37.5
Civil contractor	2	12.5
Specialist contractor	0	0
Home builder	0	0
Other	2	12.5

Most contractors were involved in general contracting (37.5%) and sub-contracting (37.5%) as indicated in Table 1.

Table 2 Profile of sample

Type of position	**Respondents**	**%**
CEO/Managing director	5	31.25
Contracts manager	2	12.5
H&S officer	4	25
Site manager	1	6.25
Project manager	2	12.5
Quantity surveyor	1	6.25
Site agent	1	6.25
Education qualification	**Respondents**	**%**
Matric	2	12.5
Certificate	5	31.25
Diploma	4	25
Degree	4	25
No qualification	1	6.25
Permanent employees		
Average number of permanent employees	13.38	
Annual turnover		
Average annual turnover	R307.78 million	
Number of years in the construction industry		
Average number of years in the construction industry	9.38 years	

As evidenced from Table 2, of the sixteen (16) respondents, 31.25% were involved in construction at top management level, 25% as health and safety representatives, the rest of the respondents i.e. site managers, contracts managers, site agents, project managers and a quantity surveyor accounted for 43.75% representation in managing health and safety. This finding indicates the passiveness of using health and safety practitioners to manage health and safety activities. The respondents have been involved in the construction industry for average 9.38 years and 81.25% had a tertiary qualification. The number of permanent employed employees in the past three years was on average 13.38 with an average turnover of R307.78 million, from the result the turnover does not concur with the requirements stated by the National Small Business Act (1996), amended in 2004 which indicates that small contractors have a total turnover of between R3m to R6m, a total number of full time paid employees between 20 and 50, whereas medium contractors are defined as having a total turnover of

between R6m to R26m, total full time paid employees between 50 to 200. It can therefore be indicated that the respondents might have had more work during the construction boom in South Africa between 2005 and 2008 or the stated figures were exaggerated by the respondents.

Health and safety commitment in SMEs in the construction industry

Table 3 Management role in H&S

Action	Mean	Rank
Actively involved in formal safety deliberations such as safety policy formulation.	4.42	1
Accept responsibility for H&S on equal basis as any other area of management responsibility	4.25	2
Take explicit and continuing steps to ensure that their interest in, and commitment to health and safety is known to all personnel	4.17	3
Involved directly in decisions to remedy the causes of serious incidents	4.08	4
Take proactive steps to plan and organize work to maximize health and safety, minimize production health and safety conflicts, rather than only intervening when conflicts arise	4.00	5
Demonstrate visible and positive commitment to H&S throughout the management style.	4.00	5
Involved directly in the review of serious incidents	3.75	7
Receive reports and publicly comment upon them	3.58	8

The results in Table 3 indicate that there is commitment among management pertaining to health and safety management. The statements were weighed in a 5 point Likert Scale where; 1=strongly disagree; 2=disagree; 3=neutral; 4=agree; and 5=totally agree; the statements are in the band 3.5 to 4.5 which indicates that the respondents agreed that management was committed to health and safety management. The results further indicate that the respondents are involved directly in reviewing serious incidents and also receive reports on health and safety and allowed to comment on them, this statement had a low mean rate of response indicating naivety of agreement from the respondents.

Table 4 indicates that there is support of health and safety. The statements were weighed in a 5 point Likert Scale where; 1=strongly disagree; 2=disagree; 3=neutral; 4=agree; and 5=totally agree. There is indication that training is provided on H&S including taking into consideration non-literate workers. Their might be resistance of releasing the respondents to participate in H&S training as this statement had a low mean rate of 3.67, however there is a general consensus by the respondents that support of H&S is given by the leaders of the SMEs organizations.

Table 4 Support given by leadership

Action	Mean	Rank
Ensure that staff are adequately trained, instructed and motivated to follow H&S procedures	4.33	1
Provide a safe working environment that suits the activity and tasks of their workers	4.33	1
Provide their staff with safe technology suitable for their activities and tasks	4.25	3
Provide training and operating instructions on H&S taking into account non-literate workers	4.08	4
Assess the quality of training and general usefulness, relevance and applicability of H&S training	3.92	5
Ensure staff are released from their commitments and participate in H&S training	3.67	6

Table 5 Goal setting and review of leadership H&S

Action	Mean	Rank
Regularly review compatibility of their safety performance goals	4.17	1
Have clear goals and objectives for their H&S performance	4.08	2

The respondents agreed that management regularly review compatibility of their safety performance and have set clear goals and objectives for their H&S performance. This indicates that targets of health and safety are set and they should be achievable. The statements were weighed in a 5 point Likert Scale where; 1=strongly disagree; 2=disagree; 3=neutral; 4=agree; and 5=totally agree. This is an indication that there are goals set to improve health and safety performance which approves commitment from management.

Table 6 Creating structure and process that promote H&S

Action	Mean	Rank
Ensure feedback on the safety performance of the organization and its management	4.08	1
Remove excessive layers of management and empower people to make decisions within their area of authority	4.00	2
Review and change how the organization gets its staff to participate in the review and improvement of H&S	3.33	3

Management tends to promote H&S culture by creating structures and processes that are friendly and reachable among its employees as indicated in Table 6. The statements were weighed in a 5 point Likert Scale where; 1=strongly disagree; 2=disagree; 3=neutral; 4=agree; and 5=totally agree. Staff members who participate in the review and improvement of H&S are not in full agree that management engage there staff to assess H&S assessment as the mean value of this statement tended towards 3.00. The results also indicate that respondents agreed in ensuring feedback on the safety performance of the organization and its management and removing excessive layers of management and empowering people to make decisions within their area of authority pertaining to H&S is promoted.

Table 7 Reviewing leaders' performance/self improvement

Action	Mean	Rank
Incident investigation are used as opportunities to review and learn constructively about leadership issues	4.08	1
Leaders receive feedback on how others, including their staff, perceive their commitment to H&S	3.92	2

The results in Table 7 indicate that reviewing leaders' performance /self improvement is agreed upon by the respondents as the mean score of the statements were, in the band 3.92 to 4.08. The statements were weighed in a 5 point Likert Scale where; 1=strongly disagree; 2=disagree; 3=neutral; 4=agree; and 5=totally agree. Incident investigation and a feedback process is revealed to the leaders pertaining to their commitment to health and safety to enable them to improve their performance.

The result in Table 8 indicates internal communication is used to address H&S issues. Management often communicate with managers from other sites on H&S matters, provide quick and effective action to complaints from their workforce regarding their working environment H&S and respond swiftly to concerns and queries raised by the workforce and /or other managers as these actions had a mean above 4.00. The statements were weighed in a 5 point Likert Scale where; 1=never; 2=seldom; 3=sometimes; 4=often; and 5=always. Sometimes leadership internally communicated on H&S as 6 (six) out of the 10 (ten) statements had a mean rating of between 2.50 to 3.50. At times communication was conducted informally between managers and employees, it was a rare occurrence.

Table 8 Internal communication

Action	Mean	Rank
Communicate with managers from other sites on H&S matters	4.17	1
Provide quick and effective action to complaints from their workforce regarding their working environment, health and safety	4.08	2
Respond swiftly to concerns and queries raised by the workforce and /or other managers	4.00	3
Discuss health and safety matters with the workforce, listening concerns and queries	3.67	4
Participate in setting H&S targets and explaining this to staff	3.42	5
Communicate formally with managers and workforce	3.42	5
Explain clearly H&S goals and objectives to staff	3.42	5
Keep staff informed about outcomes of any meetings regarding H&S matters	3.42	5
Communicate directly with health and safety practitioners	3.33	9
Communicate informally with managers and workforce	2.83	10

Table 9 External communication

Action	Mean	Rank
Respond to queries or complaints about the health and safety performance of the organization	3.92	1
Participate in dialogue with regulators on health and safety matters	3.75	2
Communicate effectively the approach and commitment to safety of the organization to external organizations by means of publications and applying for awards	3.58	3
Develop a constructive and open relationship with external organizations on H&S	3.58	3
Impose inappropriate control over who may communicate with inspectors due to fear of what might be revealed to them	3.42	5

The result in Table 9 indicates that external communication is undertaken by management. Management tends to respond to any queries pertaining to poor performance on H&S, participate in dialogue with regulators, communicate with external organizations using publications their commitment on H&S and sometimes impose inappropriate control over who may communicate with

inspectors due to fear of what might be revealed to them. The statements were weighed in a 5 point Likert Scale where; 1=never; 2=seldom; 3=sometimes; 4=often; and 5=always. The statements fell in the mean value between 3.92 and 3.42, which is below 4.00 and in the band of often and sometimes.

CONCLUSION AND RECOMMENDATIONS

It can therefore be concluded that majority of the respondents had a tertiary qualification, which concurs with the requirements of Department of Public Works, (1999) white paper advocating for the employment of qualified personnel in the construction industry. The elements identified through literature and analyzed indicate that their is commitment to H&S by management which includes; support of leadership towards H&S, goal setting and review of H&S is in place, creation of structures and processes to promote H&S and reviewing management performance/self improvement are undertaken in most of the SMEs organizations. Internal and external communication is used to address H&S issues. Internally, management often communicates, with the workers in different sites pertaining to H&S, sometimes the communication is informally done. External communication is also embraced by management, as they tend to respond to any queries pertaining to poor performance on H&S and sometimes impose inappropriate control over who may communicate with inspectors due to fear of what might be revealed to them.

The authors recommend the need to conduct country wide survey of small and medium construction enterprises including those who are in the informal sector of the construction industry using open ended interviews as this is a limitation in this study. Further study is also recommended to identify elements that will enable the improvement of H&S performance among construction SMEs.

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