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Health and safety in the Malawian construction industry

*Peer reviewed***Abstract**

Construction Health and Safety (H&S) is of significant importance to the improvement and sustainability of the construction process. This is why at various levels of the construction process, clients, project managers, architects, engineers, contractors, subcontractors, suppliers, and manufacturers have endeavoured to improve H&S management practices in construction. However, the implementation of H&S in construction has not resulted in a commensurate improvement in the industry.

The thrust of the issue is the assessment of the level of knowledge of legislation through the devolution of responsibilities to stakeholders; and perceptions relative to H&S in Malawi. Therefore, for objectivity purposes, a quantitative survey was conducted among key construction industry stakeholders such as clients, architects, engineers, project managers, and contractors. Selected findings include that the status of H&S in Malawian construction is sub-optimal, and that the contributions of clients, project managers, architects, engineers, building and civil engineering contractors have been sporadic, rather than significant. Notably, poor H&S recurs in construction, and H&S is perceived to be the duty of site managers.

Keywords: Construction, health and safety, Malawi

Abstrak

Gesondheid en veiligheid binne die konstruksie-industrie is baie belangrik vir die verbetering en volhoubaarheid van die konstruksieproses. Dit is waarom daar by verskeie vlakke van die konstruksieproses, kliënte, projekbestuurders, argitekte, ingenieurs, projekbestuurders, kontrakteurs, sub-kontrakteurs, verskaffers, en vervaardigers gepoog word om gesondheid- en veiligheidsbestuurspraktyke in konstruksie te verbeter. Nietemin, die implementering van veiligheid en gesondheid in konstruksie het nie eweredig verbeter in die industrie nie.

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Die kruks van die saak is die assessering van die vlak van kennis oor wetgewing deur die oorgang van verantwoordelikhede van aandeelhouers, en persepsies oor veiligheid en gesondheid in Malawi. Daarom, vir doeleindes om objektief te wees, is 'n kwantitatiewe opname gedoen onder sleutel konstruksie-aandeelhouers soos kliënte, argitekte, ingenieurs, projekbestuurders, en kontrakteurs. Bevindinge sluit in dat die status van veiligheid en gesondheid in die Malawiese konstruksie-industrie sub-optimaal is, en dat die bydrae van kliënte, projekbestuurders, argitekte, ingenieurs, bouers en siviele ingenieurskontraakteurs sporadies, eerder as merkwaardig is. Dit is belangrik om waar te neem dat daar swak veiligheid en gesondheid in konstruksie is, en dat veiligheid en gesondheid gesien word as die plig van terreinbestuurders.

Sleutelwoorde: Konstruksie, gesondheid en veiligheid, Malawi

1. Introduction

The H&S at Work Act for different countries realises responsibilities for employers, designers, principal contractors, and other construction project participants. Statutory responsibility for enforcing these regulations rests with governmental departments tasked with H&S monitoring and inspection. For instance, in the United Kingdom (UK), the Health and Safety Executive (HSE) exercises inspection and monitoring duties relative to H&S (HSE, 2004: 3).

However, inadequacies related to H&S legislation, and increased litigation in construction amplifies the need for collective effort and commitment in order to advance the level of H&S in construction. In addition, in order to eliminate injuries and fatalities on site, it is paramount to engender cost-effective H&S programmes that entail subcontractor selection and management (Hallowell, 2010a: 33).

Furthermore, there is a need to raise the level of H&S awareness in developing countries because recent findings suggest that in developing countries such as Botswana, construction H&S awareness is low. In addition, implementation of H&S is not only inadequate, but also top management commitment to H&S is lacking in spite of the fact that documented literature suggests that the level of H&S awareness needs to be improved relative to construction multi-stakeholders in order for the impact of H&S in construction to be appreciated (Musonda & Smallwood, 2008: 88). For example, in the case of Malawi, H&S lapses could be responsible for accidents such as the reported accident involving three workers at the Kayelekera mine construction site. The *Nyasa Times* of 18 March 2009 reported that three workers were severely burnt on 16 March 2009 while working at the mine construction site (*Nyasa Times*, 2009: online).

Although empirical research findings that focus on H&S in Malawian construction are presumably relatively non-existent and/or scarce,

findings emanating from countries sharing similar characteristics with Malawi in the region provide a pointer to what may be occurring in the Malawian construction. In particular, the disparity of construction H&S performance between developing and developed countries was ascertained in a comparative study undertaken in a developing country, South Africa, and a developed country, Singapore by Teo, Haupt & Feng (2008: 497). The study revealed that management commitment, supervisory environment, and training and competence level were identified as the major sources of the disparity of H&S performance in developing and developed countries. Although this finding is further supported by the difference in the incidence of different causes of accidents that resulted in injuries and fatalities on construction sites in South Africa and Singapore, the findings of the empirical study imply that construction H&S in a developing country such as South Africa lags behind that of a developed country such as Singapore in the three main areas mentioned above. Similarly, empirical findings emanating from Tanzania, another developing country in the region, suggest that the main reasons for the appalling situation of H&S on construction sites are due to the lack of the necessary commitment from key stakeholders that include the government (Mwombeki, 2006: 426). The study findings indicate that the government and its agencies have been weak in monitoring and enforcing the laws governing H&S on construction sites, while a general lack of human and financial resources has marginalised the ability of regulatory bodies to promote and enforce H&S on construction sites. In addition, it is notable that the study findings suggest that there has not been a commensurate improvement in H&S in spite of the availability of enabling legislation in Tanzania. Even in Ghana, another country in the region, an exploratory study revealed that, although the country has the necessary institutional infrastructure for effective management of H&S, the lack of government commitment that is exemplified by logistical constraints facing inspectorate departments limits the operational efficiency of these departments that are deemed to be responsible for H&S management in the country (Kheni, Gibb & Dainty, 2006: 281). Clearly, these findings indicate that construction H&S could be a cause for concern in sub-Saharan countries, and by implication H&S could be a problem in Malawi. Hence, there is a need to examine the state of H&S in the Malawian construction industry.

2. Literature survey

Clients, project managers, architects, engineers, contractors, subcontractors, manufacturers, professional and industry associations as well as other stakeholders in construction contribute and influence H&S in various forms (CIDB, 2009: 24). However, empirical findings suggest that built environment professionals are not adequately using their influence to reduce the rate of incidents and fatalities in construction (Geminiani, 2008: 226).

The uniqueness of the industry, which collectively poses a challenge in terms of construction H&S, may provide a platform for holistic improvement initiatives (Smallwood, 2000: 467-471). In addition, although comparatively the construction industry may have some similarities with other production-oriented industries, the uniqueness of construction tasks, environment, materials, equipment, and people necessitates addressing construction H&S in a construction context rather than in a general context (Geminiani, 2008: 215).

Nevertheless, the industry could improve how it engenders and sustains H&S culture on construction sites. Although in many cases top management's commitment to H&S may be lacking, the amplification of the importance of H&S with respect to future organisational profitability and sustainability may reorient priorities in the industry (Hallowell, 2010b: 412). For instance, when issues relative to H&S become business priorities for firms involved in construction, a platform for the improvement of H&S is thus enacted without the need for constant changing of laws and/or regulations (Dulaimi, Ling & Ofori, 2004: 709).

However, research undertaken in developing countries that included African countries such as Botswana, Egypt, Malawi, Nigeria, and South Africa revealed that (Gibb & Bust, 2006: 65-77):

- Clients are not supportive of H&S initiatives;
- H&S priorities are not the same as in developed countries;
- H&S regulations are inadequately enforced by authorities;
- Lifting operations are done in ways not consistent with practices in developed countries;
- Workers' use of power/hand tools is unsatisfactory;
- Women are not able to carry out work without increasing risk relative to their H&S, and
- Construction vehicles are used in an unsafe manner.

Therefore, the continuing poor H&S performance of the construction industry in the form of fatalities, injuries, and disease; the number of large-scale construction accidents, and the general 'non-participation' by key project stakeholders such as clients and designers provided the catalyst for a new approach to construction H&S (Smallwood & Haupt, 2005: 2). Reducing occupational diseases and accidents would not only improve and save people's lives, but also reduce the hundreds of millions of rand paid annually to victims of work-related accidents, and relieve the pressure placed on the country's financial situation (CIDB, 2009: 37-40).

2.1 Legislation

Just as the 2003 Construction Regulations in the Republic of South Africa (RSA) address H&S in South African construction, the National Construction Industry Act No. 19 of 1996 established the National Construction Industry Council of Malawi, and addresses H&S in the country. In particular, the Act provides, *inter alia*, for the establishment of the NCIC, for the promotion and development of the construction industry in Malawi, for the registration of persons engaged in the construction industry, and for the coordination of training of persons engaged in the construction industry (Brushett & Seth, 2005: 2). In fulfilment of its mandate, therefore, the NCIC has 1355 firms registered in its database as at 2010 (Salephera Consulting, 2010: 9). Of these firms, 80% are registered in the categories of civil and building contractors, 10% in the category of electrical contractors, while consultants constitute 4% of the population. Even so, regardless of geographical boundaries and industry structure, most H&S-related legislation spells out responsibilities of participants in the construction process in terms of written policy statements, noise and H&S in the workplace, equipment and machinery usage, control of dangerous substances, welfare facilities on site, risk assessment, first-aid facilities, and other legal requirements (HSE, 2004: 9; South Africa, 2003: 17).

Although the South African Construction Regulations are to a large extent performance-based, it is perceived that they had an impact among project managers and contractors, in particular. Although not statistically quantifiable, the regulations also seem to have had a positive impact on reducing H&S accidents (CIDB, 2009: 16). Therefore the significance of appropriate regulations cannot be over-emphasised. However, it is important to note that the enforcement of regulations poses another challenge to H&S. For example, Geminiani (2008: 225) discovered that the Department of Labour (DoL) inspectorate charged with enforcement responsibilities

in South Africa is perceived to be more ineffective than effective, and that its influence and role are reactive rather than proactive.

2.2 Perceptions relative to H&S

Anecdotal evidence suggests that the dynamics of the construction process demand that effort devoted to H&S planning be proportionate to the risks and complexity inherent in projects. That is, when deciding what needs to be done in order to comply with H&S regulations, the focus should always be on action necessary to reduce and manage risks and eliminate hazards. In fact, Hare, Cameron & Duff (2006: 447) contend that integration of H&S plans with pre-construction planning processes may reduce H&S problems in the construction process.

Therefore, the dynamics related to construction activities/tasks that leads to changes during construction induces unsafe behaviours, and may also preclude the effectiveness of straightforward H&S defensive measures (Musonda & Smallwood, 2005: 58). These behaviours are mostly rooted in workplace culture, which is collectively made up of values, vision, goals, mission, assumptions, and purposes espoused in organisations (Hallowell, 2010b: 411). Accordingly, Smallwood & Haupt (2005: 3) suggest that top H&S performance must be accepted as an achievable goal to realise an optimum H&S culture. Goals must be set at a high level. If an organisation sets goals at a low level it will probably attain such goals. Improving the industry norm marginally relative to H&S is unlikely to be of much comfort. Therefore, 'Zero accidents' as an attainable goal is worth the collective commitments of project stakeholders.

2.3 H&S duties of clients, consultants, and contractors

The International Labour Office (ILO) (1992: 9) specifically states that designers should receive training in H&S; integrate the H&S of construction workers into the design and planning process; not include anything in a design which would necessitate the use of dangerous structural or other procedures or hazardous materials which could be avoided by design modifications or by substitute materials, and take into account the H&S of workers during subsequent maintenance.

Similarly, the HSE (2004: 17-20) suggests that it is pertinent for clients, architects, project managers and engineers to plan, manage and monitor construction phases in liaison with contractors; prepare, develop and implement a written plan and site rules; give contractors relevant parts of the plan; ensure that suitable welfare facilities are

provided from the start and maintained throughout the construction phase; check the competence of all appointees; ensure that all workers have site inductions and any further information and training needed for the work; consult with the workers and liaise with their co-ordinator regarding ongoing design, and secure the construction site. In addition, contractors are required to plan, manage and monitor their work and that of their subcontractors; check the competence of all their appointees and workers; train their employees; provide information to their workers; comply with the specific requirements in Part 4 of the Regulations; ensure that there are adequate welfare facilities for their workers; provide any information needed for the H&S file; inform clients and consultants of problems with the plan and of reportable accidents, diseases and dangerous occurrences on site.

3. Research methodology

The quantitative study addressed H&S management in terms of knowledge of legislation (its existence); perceptions relative to H&S; aspects of H&S culture, and management practices/interventions.

3.1 The data

The survey instrument was designed to capture stakeholders' actions or lack thereof, and their perceptions as they are the direct executors of project objectives. Because of the type of data that was required, the survey of concerned stakeholders on construction sites using questionnaires was deemed appropriate for the research. The research was limited to architects, clients, building and civil engineering contractors, engineers, and project managers operating in the Malawian construction industry. The sample stratum consisted of 5 per group – a total of 30.

3.2 Results

Out of the 30 questionnaires circulated to 5 of each of the architect, client, building and civil engineering contractor, engineer, and project manager groups, 21 responses were received, which were included in the analysis of the data. This equates to a response rate of 70%.

Tables 1, 2, and 3 indicate the respondents' degree of concurrence relative to 4 statements and 2 drivers that addressed the 'status quo' pertaining to H&S in the Malawian construction industry in terms of responses to a scale of 1 (never/strongly disagree/not important)

to 5 (always/strongly agree/very important), and a mean score (MS) ranging between 1.00 and 5.00.

Table 1: Status of H&S in Malawian construction

Statements	Response (%)					MS
	Never.....Always					
	1	2	3	4	5	
Reporting H&S lapses	0.0	4.8	14.3	19.0	61.9	4.38
Poor H&S recurs in construction	9.5	4.8	38.1	23.8	23.8	3.48

Table 1 indicates the frequency of reporting of H&S lapses in the Malawian construction industry. Of the respondents, 61.9% affirm that upon the discovery of H&S lapses, they always report such lapses/shortcomings. The MS of 4.38 effectively indicates that H&S lapses are often to always/always reported. This may be attributed to respondents' awareness of the consequences of poor H&S, since poor H&S appears to occur in the Malawian construction industry. In this context, poor H&S refers to the frequency of incidents and accidents that can be deemed to be detrimental to the wellbeing of construction workers and the general public. In addition, the MS of 3.48 indicates that there is considerable scope for the improvement of H&S in Malawi as its occurrence can be deemed to be between sometimes to often/often. The MS is deemed to be associated with respondents' perceptions of how often they encounter inadequacies relative to H&S in the Malawian construction industry.

Table 2 indicates the respondents' perceptions relative to H&S in Malawi relative to two statements. It is notable that 61.9% of the respondents strongly agree that 'H&S is the duty of site managers'. The resultant MS of 4.38 indicates that the concurrence can be deemed to be between agree to strongly agree/strongly agree. Although site managers are responsible for H&S and have substantial influence thereon, empirical research findings indicate that in order to realise substantive improvement in construction H&S, all stakeholders in the construction process need to be collectively responsible for H&S (CIDB, 2009: 1). More than 50% of the respondents agree and strongly agree that 'H&S is a good public relations tool'. The MS of 3.52 indicates that the concurrence can be deemed to be between neutral to agree/agree. Injuries and accidents have always resulted in a negative image of the industry, and organisations operating in the industry that do not recognise the importance of optimum H&S risk negative publicity.

Table 2: Perceptions relative H&S in Malawian construction

Statement	Response (%)					MS
	Strongly disagree.....Strongly agree					
	1	2	3	4	5	
H&S is the duty of site managers	4.8	0.0	9.5	23.8	61.9	4.38
H&S is a good public relations tool	14.3	4.8	23.8	28.6	28.6	3.52

Therefore, it is not surprising that 'negative publicity related to H&S lapses' is one of the drivers of organisational interest in H&S (Table 3). The MS of 3.43 relative to 'negative publicity related to H&S lapses' indicates that the importance can be deemed to be between important to more than important/more than important. It is notable that 'corporate H&S code of conduct' has a higher MS, namely 4.24, which indicates that the importance can be deemed to be between more than important to very important/very important, and therefore can be deemed to be a significant driver of H&S in Malawi. The reasons for this are that subscription to such a code reflects organisational commitment to H&S, and readiness to act in respect of failures relative to H&S.

Table 3: Drivers of H&S improvement

Drivers	Response (%)					MS
	Not important.....Very important					
	1	2	3	4	5	
Corporate H&S code of conduct	4.8	0.0	14.3	28.6	52.4	4.24
Negative publicity related to H&S lapses	14.3	9.5	23.8	23.8	28.6	3.43

Nevertheless, the inability, or rather the apparent reluctance of organisations to allocate adequate 'budget towards investigations relative to H&S issues' is notable (Table 4). Only 28.6% of the respondents responded in the affirmative. Furthermore, only 47.6% of the respondents have 'written construction site specific H&S policy statements' in their organisations. These findings do not constitute top management commitment to H&S, which is crucial for any H&S improvement initiative.

Table 4: Evidence of top management commitment to H&S

<i>Statements</i>	<i>Yes (%)</i>
Budget devoted to investigations relative to H&S issues	28.6
Written construction site specific H&S policy statements	47.6

4. Conclusions and recommendations

In spite of having the necessary legislation in place, the study confirmed that construction H&S could be a major issue in developing countries. Though findings emanating from the study are primarily related to the construction industry in Malawi, anecdotal evidence suggests that the situation is not significantly different in other developing countries.

However, there is significant scope for improving H&S in developing countries and, by implication, Malawi. The perception that H&S is the contractor's responsibility, the limited financial provision for H&S, and the limited availability of H&S policies does not reflect H&S leadership and management commitment to H&S in Malawi. However, it is acknowledged that H&S is a strategic issue, and that H&S failures negatively impact on organisational image. Optimum H&S leadership, management commitment to and management involvement in H&S, increasing awareness, and appropriate enforcement of legislation should therefore result in a decline in the number of construction-related fatalities and injuries. Accordingly, recommendations arising from the study include:

- Re-orientation and continuing professional development of built environment and construction industry practitioners in terms of their H&S responsibilities is necessary;
- Construction H&S should be included in the tertiary education curricula of all built environment stakeholders;
- All stakeholders should provide H&S leadership, be committed to H&S, and view H&S as a strategic issue, as opposed to an operational issue;
- All stakeholders should budget relative to H&S, and
- All construction workers should receive H&S training.

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