

A pilot study on public clients' contribution to construction workers' health and safety in Botswana

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ABSTRACT AND KEYWORDS

Purpose of this paper

This paper presents findings from a pilot study conducted in two major construction public client organisations in Botswana on their contribution to construction workers' health and safety.

Design / methodology / approach

Structured questionnaire interviews were conducted with project managers. The aim was to establish public client organisations' practice in promoting construction workers health and safety.

Findings

The pilot study found that public clients' contribution to workers health and safety is not significant. Further, it was realised that client organisations presented opportunities for further research on health and safety performance improvement in the construction industry.

Limitations

The survey was only conducted in two major public clients and interviews were only conducted with four senior project managers from each organisation and so the results may not be generalised to all public clients in Botswana. Further, only a few selected elements of the many suggested characteristics of health and safety culture were assessed in the study.

Originality / value of this paper

Public clients' role and health and safety performance improvement has not been extensively explored even though it is widely accepted that clients are equally important to health and safety improvement. This paper seeks therefore to contribute to this body of knowledge.

Keywords: Botswana, client, construction, health and safety, workers

1.1 INTRODUCTION

The construction industry is said to be one of the most dangerous industries and continues to lag behind other industries (Huang and Hinze, 2006; Sawacha, Naoum and Fong, 1999; Suraji, Sulaiman, Mahyuddin & Mohamed, 2006, and Seo, 2005).

Despite having one of the worst records on health and safety, the construction industry also has a vital role to most economies of the world, Botswana included. The construction industry in Botswana is one of the most important economic sectors contributing about 11.6% to the National Gross Domestic Product (GDP) making a construction worker one of the most important resources in the nation. In the 2009/10 financial year, budget allocation to one major public client organisation in this study was 13.7% of the total national development budget. This was the second largest allocation in comparison to other Government institutions. Although the current economic melt has somehow affected the construction sector in Botswana, the industry still managed to record growth in the 2008/2009 financial year of almost 12% between March and June 2008 (Mmegi, 2008).

The construction industry is also one of the largest employers. Current figures show that the construction industry contributes about a third of the entire labour force in Botswana accounting for about 7.1%. Because of the growth recorded in construction between March and June 2008, employment figures also went up in the industry by about 1.3% (CSO, 2008). A construction worker in Botswana is therefore very important and contributes greatly to the national economy.

Construction workers have also been victims of poor health and safety environments and management practices. Mmegi a local news paper, reported in their publication of 28 August 2008, that construction workers at one construction site wrote to the labour minister complaining about the lack of personal protective equipment and those that had been issued with one, were forced to pay a fee for it (Mmegi, 2008). In another unrelated incidence, Mmegi (2005) reported on 11 November 2005 that workers at a named construction site complained about a lack of safety signs to caution the public and workers on site of hazards on the site. Workers lamented that safety was evidently not a priority for the construction company (Mmegi, 2005). In yet another report, a 59-year-old employee of a named construction Company in Lobatse died on the spot and three others suffered injuries when a scaffold collapsed while they were doing some maintenance work at the Lobatse Institute of Health Sciences on June 16, 2000. It is suspected that the scaffold was not in good condition when the four used it on that fateful afternoon (Daily news, 2000).

A study conducted in Botswana by Musonda and Smallwood (2005) also revealed a low health and safety awareness, non compliance to legislation and a general lack of policies and procedures by contracting organisations.

The intention of the pilot study was to determine the extent to which public clients contribute to improving construction workers' health and safety. This was achieved by assessing public clients' practice and level of effort on health and safety management.

A considerable amount of research has been conducted on health and safety improvement in construction. However most research focuses on processes and practices in contracting organisations (Hinze, 1997; Hinze, 2002 and Levitt and Samelson, 1993) and on designers (Hinze and Gambetese, 1996). Few studies such as the one by Huang and Hinze (2006) have looked at the role of clients. This pilot study is therefore complementary to Huang and Hinze's (2006) study and seeks to add to this body of knowledge.

For the purpose of this particular paper, the term 'client' and 'owner', has been used interchangeably to refer to one and the same entity. Typically they are the initiators of projects and purchasers of the construction industry's product (Lingard, Blismas, Cooke and Cooper, 2008).

1.2 CLIENT'S ROLE IN PROMOTING HEALTH AND SAFETY

A better health and safety outcome has been associated with a positive health and safety culture prevailing within an organisation concerned and indeed the industry (CRC, 2006; Molenaar et al, 2002; and Chinda and Mohamed, 2007). Health and safety culture is therefore very important in so far as the improvement of construction worker's health and safety is concerned. Chinda and Mohamed (2007) rightly argue that it seems that attempts to improve the health and safety record will not be fully effective until the health and safety culture is improved. However, most studies on health and safety culture in the construction industry have mainly been conducted in contracting organisations. Health & safety culture of construction clients or owners is an area that has not been extensively explored even though it is widely accepted that clients are very important to health and safety performance improvement.

Given that most construction projects in Botswana are executed by public sector clients, it follows therefore that they may be influential on more than half of all construction projects in Botswana. Many researchers affirm that clients can influence health and safety on site (Huang and Hinze, 2006; Suraji, 2001 and Smallwood, 1998). Therefore, the health and safety culture within client bodies is important since health and safety culture has also been identified to have an impact on health and safety goals (CRC, 2006).

However, from evidence in several earlier studies it seems that most clients have not shown serious commitment to health and safety. A study conducted by Smallwood (1998) in South Africa; found that most clients give priority equally to cost and quality in comparison to health and safety being largely overlooked. This situation is a challenge to health & safety performance improvement.

A further challenge is the perception that health and safety management is primarily the responsibility of contractors despite the emergence in recent times of legislative and regulatory frameworks that redistribute responsibility for construction health and safety to all parties involved in the construction process. Interventions such as health and safety audits are usually designed only to find risks or hazards at the technical or operational level but less concern at managerial level of the project organisation as a whole. Few strategies are directed at improving upstream elements including those involving clients. Health and safety campaigns are only made for operatives rather than for those who are involved during the concept or design phases of a construction project Suraji et al (2006).

A review of literature confirms that examination of the role and culture of clients are almost absent from most studies. Concentration is overly placed on the construction phase of projects and the related operational processes of contractors (Saurin et al, 2003; Sawacha et al, 1999; Carder, 2002; Teo et al, 2005 and Hudson, 2001). However, Huang et al (2006) focused on clients and Lingard et al (2008) on the development of a model client framework for the Australian Government.

Clients if involved can influence worker health & safety (Huang et al, 2006 and Smallwood, 1998). Using total recordable injury rate (TRIR), to

determine the relationship between health and safety performance and owner involvement, Huang et al (2006) demonstrated that clients can influence health and safety outcomes. Smallwood (1998) found that most general contractors believed that the client could potentially influence their health and safety performance.

According to Suraji et al (2006), improving health and safety means to make clients, client representatives, designers and contractors as well as employees to be aware of their roles in the improvement process. Hinze and Gambetese (1996) further argue that involvement of clients is an essential requirement for the zero injuries objective. In fact according to Gambetese (2000), owners should participate with contractors in all project H&S activities.

Bomel (2001) identified the culture of client organisations as presenting considerable opportunities for health and safety improvement in the UK construction industry. Improving health and safety record has been attributed to an improvement in the health and safety culture by many authors (Chinda and Mohammed, 2008; Baram and Schoebel, 2007; Dingsdad, Biggs and Sheahan, 2006; Muniz, Peon and Ordas, 2007 and CRC, 2006).

There has also been an increasing interest in the subject of safety culture primarily because of its impact on safety outcomes. As a result many definitions of the concept have emerged. A number of authors however agree that there is no unanimity on the definition of the concept of health and safety culture (Muniz et al, 2007; Hopkins, 2006 and Cooper, 2000). According to Cooper (2000), health and safety culture does not operate in a vacuum. Rather it affects and is affected by other non-H&S related operational processes or organisational systems. For the purpose of this paper and study H&S culture describes the H&S beliefs, values and attitudes that are shared by the majority of people within an organisation (Muniz et al, 2007; CRC, 2006; Australian Government, 2008; Molenaar et al, 2002 and Cooper, 2000). This definition is also summed up by 'the way we do things here' (Cooper, 2000: 115).

There has been debate not only around the definition of the safety culture concept, but also its measurement. However, according to Cooper (2000) it is "that observable degree of effort with which all organisational members direct their attention and actions towards improving safety on a daily basis". The units of 'effort' differ and could be the degree to which members give priority to H&S over production. Outcomes of a positive H&S culture could be a reduction in injury rates. However as Cooper (2000) points out, reductions in injury rates although very important, are not sufficient in themselves to indicate the presence or quality of a H&S culture, where as "that observable degree of effort" is something that can always be measured and assessed.

This paper focuses on public clients' contribution to construction workers' health and safety. This is achieved through an assessment of clients' commitment, allocation of resources and leading by example. In other words, it is a preliminary assessment of "that observable degree of effort" towards improving construction workers' health and safety in Botswana.

1.3 RESEARCH METHODOLOGY

A structured questionnaire was used to conduct interviews with representatives at two public construction client organisations. This approach was followed to improve consistency in the responses and ease

of analysis. The method was also considered appropriate for a pilot study. In the next phase of the study a Delphi approach will be followed.

1.3.1 Profile of sample

Four project managers from each of the two major public client organisations were interviewed given that they had access to information on policies and their responses on their practices on health & safety would shade light on the way things were done in their organisations. These two public clients, namely X and Y, were selected because they were recurrent clients of constructed facilities with one of them taking a second largest percentage of the developmental budgetary allocation. Almost 14% of the developmental budget was allocated in the 2009/10 budget to it. They were also directly involved in the management of their construction projects across Botswana.

Most responses to the questions were based on a five point Likert rating scales of frequency, agreement or importance.

The generalization of the findings of the study to the entire Botswana construction client sector is limited considering the small sample size. However, considering the market share of the selected clients the findings are indicative of what the likely trends might be and the issues that need to be examined more closely.

1.4 FINDINGS

1.4.1 Public client contribution to health and safety management

Respondents were asked about how often they implemented various health & safety elements, namely:

1. Appraising designs in terms of health & safety;
2. Attending health & safety specific meetings on construction projects; and
3. Conducting health & safety audits.

Responses on whether both client organisations appraised designs in terms of health & safety revealed that this was not frequently done in both organisations. In client organisation X, half of the interviewees reported that designs were 'rarely' appraised in terms of health and safety while the rest reported appraisal was done 'sometimes' (Table 1.0).

Table 1.0 Appraising of designs

Entity	Response (%)				
	Never	Rarely	Sometimes	Often	Always
Client organisation X	0	50	50	0	0
Client organisation Y	25	25	50	0	0

As to whether clients attended health & safety specific meetings on construction projects, participants responded similarly, namely that clients 'rarely' attended these meetings. Half of the interviewees from public client X indicated that meeting attendance occurred 'rarely' while all except one

from public client Y reported that they 'rarely' attended such meetings (Table 2.0).

Table 2.0 Attending health and safety meetings

Entity	Response (%)				
	Never	Rarely	Sometimes	Often	Always
Client organisation X	0	50	25	0	25
Client organisation Y	0	75	25	0	0

In client organisation X, responses from half of the interviewees were that clients conducted health and safety audits 'sometimes' with the rest reporting that health and safety audits were either 'rarely' or 'never' done. This finding was echoed in client organisation Y with 75% reporting that they 'rarely' conducted health and safety audits.

1.4.2 Perceptions on health and safety management, and on impact of accidents on clients

Interviewees were also asked to rate the extent to which accidents directly impact on public clients. 50% of respondents from client organisation X indicated that the impact was 'low' and the other 50% indicated that it was 'medium'. A similar result was obtained from client organisation Y. 50% of the respondents indicated that the impact was 'medium', the other 25% indicated that the impact was 'low' and the rest said it is 'very low'.

Assessment of perceptions on health and safety management was another important aspect that was examined through questions about practices in the organisations and the management of health and safety.

In particular responses were sought relative to the following:

1. Whether clients should be obliged to pay for ensuring health and safety on construction projects;
2. Whether health and safety should be a primary responsibility of either contractors, clients or designers; and
3. Whether revision of legislation would make client organisations responsible for the management of health and safety.

Relative to whether clients should pay for ensuring health and safety, responses ranged equally from 'strongly agreeing' and to 'disagreeing' with the idea. Combined responses across the two organizations were that 25% 'strongly agreed', 12^{1/2}% were 'not sure', 25% 'disagreed' and the remaining 12^{1/2}% 'strongly disagreed' with the idea (Table 4.0). Similarly combined responses from both client organisations showed that 37^{1/2}% 'strongly agreed', a similar percentage also 'agreed' with the idea whilst 12^{1/2}% 'disagreed' and the other 12^{1/2}% 'strongly disagreed' on whether health and safety should be a primary responsibility of either clients, contractors, designers or indeed be equally shared between all of them. There was strong full agreement in client organisation X on the client being more responsible for health and safety. In client organisation Y however, only half 'agreed' while the other half 'disagreed' with the idea. Similar results were obtained on responses regarding whether designers should be more responsible for health and safety. There was however a general

agreement that all parties should be involved in the management of health and safety although not so emphatic as on other aspects where there was a strong agreement. Between the two client organisations, responses from 75% of the interviewees 'agreed' that all parties must be responsible for ensuring health and safety on construction sites (Table 5.0).

Table 4.0 Clients paying for health and safety

Entity	Response (%)				
	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
Client organisation X	25	25	0	25	25
Client organisation Y	25	25	25	25	0
X & Y combined	25	25	12.5	25	12.5

Table 5.0 Health and safety responsibility

Entity	Response (%)						Ranking index	Rank
	Strongly agree	Agree	Not sure	Disagree	Strongly disagree			
More responsibility to: Clients	50	25	0	12.5	12.5	2.88	2	
Contractors	37.5	37.5	0	12.5	12.5	2.75	3	
Designers	25	25		25	25	2.00	4	
All parties	50	25	12.5	12.5	0	3.12	1	

1.5 DISCUSSION

In many instances, accidents on construction sites can not be attributed to worker's carelessness but quite often the lack of a controlled working environment and the complexity and diversity of the size of organisations (Sawacha et al., 1999) and management and organisational failures (Reason, 1993 and Groeneweg, 1994). Unfortunately, direct impact of accidents is felt by workers and their families almost immediately.

Statistics show that injury rates in the construction sector are still 50% higher than that of all industries (Huang et al., 2006a). According to Sawacha (1999), in the construction industry the risk of a fatality is five times more likely than in a manufacturing based industry, whilst the risk of a major injury is two and a half time higher. It is no wonder 67% of the workers across the EU in the construction sector believed that they are at risk of having accidents (Commission of European Communities, 1992).

Considering the results from the pilot study presented above, workers are justified by so to say live in constant fear of imminent accidents. Contribution by public clients to construction workers' health and safety does not seem to be significant.

It was also interesting to find out that interviewees' perceived the direct impact of accidents on clients to be low. This could be in part the reason for their level of contribution to construction workers' health and safety. It is argued that one of the factors that could motivate clients to address health and safety apart from human considerations is the impact and cost of accidents on those that initiate projects. This argument is validated by the responses on the level of effort applied by public clients in contributing to the improvement of workers' health and safety. The two public clients

rarely attended health and safety meetings, rarely conducted health and safety audits and are not consistent in appraising designs in terms of health and safety.

1.6 CONCLUSION

Literature informs that clients set the health and safety culture tone. Health and safety record has been attributed to health and safety culture. It follows therefore that it seems worker health and safety is likely to improve only if a positive health and safety culture exists in public client organisations and ultimately in the entire industry.

This pilot study revealed that the two public clients' health and safety culture is not strong as seen through their practice on a few selected efforts. The above consequently raises questions on public clients' contribution towards construction workers' health and safety improvement. It may be concluded therefore that the pilot study did not reveal a significant contribution by public clients towards the improvement of construction workers' health and safety. This aspect to health and safety improvement needs to be explored more.

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