Journal of Construction Project Management and Innovation Vol. 6 (1): 1339-1352, 2016
ISSN 2223-7852

CONSTRUCTION HEALTH AND SAFETY (H&S) PERFORMANCE IMPROVEMENT: ARE CLIENTS AND CONSULTANTS PLAYING THEIR PART?

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ABSTRACT

Performance improvement of Health and Safety (H&S) in the construction industry is invariably a result of a joint effort of the project team members. Clients and their consultants play an important role in ensuring that H&S is addressed throughout the project stages. The objective of the paper is to assess the roles of clients and consultants in improving H&S in the construction industry at the tendering and construction stages, and the pre-requisites thereto. Respondents were randomly selected from delegates of the Construction Industry Forum and data was collected using self-administered questionnaires and a review of literature. Findings indicate that with the exception of the role of ensuring that the contractor is complying with the H&S plan during construction, which is often done, other roles are fulfilled less frequently. Furthermore, it was revealed that those respondents that were more experienced in terms of H&S were more involved in H&S and contributed more to the improvement of H&S than those who were less experienced. The paper concludes that many consultants and their clients are not fully participating in H&S. The paper therefore recommends that current laws and regulations be reviewed and amended to include duties of clients and consultants, and that clients and consultants to be sensitized and empowered to fulfill their roles.

Keywords: Clients, Construction, Consultants, H&S, tendering

1. INTRODUCTION

The construction industry is regarded as an unsafe industry to work in. A number of studies (Musonda and Haupt, 2008; Msonda and Haupt, 2009; Construction Industry Development Board (cidb) 2009; Kikwasi, 2009; Okorie and Smallwood, 2010; Smallwood, 2013) have revealed deficiencies in H&S performance including lack of documenting and communicating risk, lack of H&S audits and prioritizing of H&S in site meetings, and lack of management commitment to H&S. The performance of Tanzanian construction industry in terms of construction H&S is still poor. This is reflected in the works of Kikwasi (2009), Mwombeki (2005) (cited in Kikwasi, 2009), Phoya *et al. (*2011), Phoya (2012) and Matiko (2013). The unsatisfactory performance of industry in H&S aspects is aggravated by current laws and regulations which place the responsibility of the project H&S with the contractor

and leaving clients and consultants with no obligations. Studies (Kikwasi, 2009; Phoya, 2012; and Matiko, 2013) have established that the responsibility for construction H&S lies with the main contractor, resulting in many designers, consultants and clients excluding themselves in H&S matters. One concern of this study is to determine the involvement of clients and consultants in construction H&S in the absence of laws, regulations or bylaws which stipulate their duties and responsibilities.

The dependence on contractors to improve construction H&S has an adverse impact on the performance of the industry in terms of H&S. Some countries such as South Africa through the Construction Regulations of 2003 and now 2014, and the United Kingdom through the Construction (Design and Management) Regulations of 2007 and more recently 2015, have engendered clients and consultants involvement in construction H&S. The need to involve clients and consultants in construction H&S has been stressed by Said *et al.* (2009), cidb (2009), Bhattacharjee *et al*. (2011), Niemandt and Crafford (2011), Ulang (2012) and Smallwood (2013).

Improvement of construction H&S starts at project level and is a result of a joint effort of the project team members. Efforts have been directed towards this end and can be traced to the works of Teo *et al* (2008), Smallwood (2004:2013), Choudhry *et al.* (2009), Rajendran and Gambatese (2009), Agumba and Haupt (2009), Okorie and Smallwood (2011), Bhattacharjee *et al.* (2011), Musonda and Haupt (2011), and Lingard *et al.* (2013). Collectively, these studies advocate the need for management commitment and involvement of project team members in pursuing, and hence improvement of construction H&S.

The objective of the paper is to assess the roles of clients and consultants in improving H&S in the construction industry at the tendering and construction stages. To achieve this objective, a mixed method design conducted on cross-sectional basis was employed to establish a baseline for further study on the subject matter. Data was collected through a review of literature and the administration of questionnaires, the completed versions of which were analyzed using the Statistical Package for Social Sciences (SPSS) statistical software. The study, though aimed at capturing a wide range of respondents, few responses were attained. As a result, although the findings originate from a diverse range of respondents, the findings cannot be generalized. However, the findings of the study did establish the extent of clients and consultants contributions to improving H&S in construction, which serves as a baseline for further improvement of construction H&S by all stakeholders. This paper presents previous work on the roles of clients and consultants and performance improvements in construction H&S; a description of how the research was done, analysis and discussion, and, conclusion and recommendations.

2. H&S AND THE CONSTRUCTION INDUSTRY

The construction industry has a poor record of safeguarding the H&S of people working in it, and even third parties. Several studies have assessed the state of H&S in the construction industry. Musonda and Haupt (2008) observe that H&S is not raised as an item that is very important and thus a deliverable on project; failure to realize the risk of deep excavations in collapsible soils; lack of documenting and communicating of risks; and lack of H&S audits and prioritizing of H&S during site

meetings. A pilot study conducted by Musonda and Haupt (2009) revealed that there was limited commitment to H&S, an inequitable allocation of resources to ensure H&S improvement, lack of leadership and a lack of shared value of H&S in client organizations. The cidb (2009) points out that at organizational and site level, poor construction H&S performance is attributable to a lack of management commitment, inadequate supervision, inadequate or a lack of H&S training, lack of worker involvement, personal risk appreciation and work pressures. Okorie and Smallwood (2011) conclude that the construction industry has one of the highest accident rates when compared with other industries; although, there are many causes of construction accidents, about 80% of the causes of site accidents are due to unhealthy and unsafe behaviors which can be traced back to lack of management commitment and improper acts of employees and violation of site H&S rules; construction accidents have a negative impact on the families of the deceased workers and construction firms' profitability through the direct and indirect costs of accidents; and construction accidents not only impact negatively on the families of deceased workers and construction firms, but also society at large, such as the national healthcare system. Alkilani *et al*. (2013) investigated issues in construction H&S and establish that lack of government commitment exemplified by regulation and policy and legal constraints that limit the operational efficiency of government departments responsible for H&S management were hindering the development of good H&S practice. Muiruri and Mulinge (2014) reveal challenges in the management of H&S which are inadequate personal and protective equipment, poor maintenance of personal protective gear, lack of top management support in the management of health and safety in construction sites, inadequate enforcement mechanisms, inadequate welfare facilities, absence of safety and health committees, unawareness of health and safety matters among the workers and lack of equipped first aid kits on the construction sites. Alme´n and Larsson (2014) reiterate on the importance of the following factors in terms of construction H&S: clients include requirements with respect to H&S routines and actual injury preventive measures in contracts with all those who take part in the planning and construction phase, especially the project leader and lead designer; the coordinator be appointed in the early stages of the planning and construction phase; designers should have enough construction H&S competencies to foresee the construction H&S consequences of their designs, and H&S communication should be in both oral and written forms.

The Tanzanian construction industry contributes significantly to the national economic growth through Gross Domestic Product (GDP), Gross Fixed Capital Formation, creation of employment, and industrial productivity. According to National Bureau of Standards (NBS) (2013) in volume terms, the construction industry accounted for an average of 6.8% of GDP in the 2003-2010 periods. Likewise, NBS (2013) and President's Office Planning Commission (2011) indicate that the performance of the industry in meeting the stakeholders and national expectations has been improving. However, this performance is not realized in construction H&S. Few studies conducted on this area reveal poor performance of the industry in terms of construction H&S. Kikwasi (2009) reveal that the level of implementation of H&S requirements is inadequate and conclude that the industry is performing poorly on H&S aspects. Some of the challenges highlighted (*ibid*)

include: H&S was not taken seriously by parties involved in construction projects, clients and consultants are more concerned with quality of finished work rather than H&S matters; most sites do not have safety personnel and safety equipment; construction workers are not sensitized or trained on the need to observe H&S requirements; H&S matters are not budgeted for; H&S matters are not considered at the tendering stage as result of clients expecting contractors to bear H&S associated cost during project execution, and clients and contractors assume that by not making allowance for H&S the project construction cost is reduced. Phoya (2012) reveal that site location, site configuration, procurement system and complexity of design are the main challenges hampering health and safety risk management. Matiko (2013) determines challenges arising from regulatory framework in Tanzania to include: There is no reliable mechanism for reporting and recording occupational accidents and diseases; most of these Acts apply only to large-scale projects undertaken for the purpose of commercial and industrial use; almost all Acts place all responsibilities for the promotion of OH&S on the main contractor; Some of the legislation requires the appointment of safety and health supervisors, but no qualifications have been set for this cadre; some legislation requires the compilation of a health and safety arrangement plan for a building exceeding the height of three storeys, but does not require that the plan is submitted to the authorities for approval; and inadequate enforcement of the existing legislation. Phoya *et al.* (2011) concludes that majority of the workers do not have formal training on health and safety issues.

2.1 Roles of clients and consultants in construction H&S

The dependence on contractors to improve construction H&S has an adverse impact on the performance of the industry in terms of H&S. In Tanzania, only contractors are responsible for H&S aspects of construction projects. The Contractors Act No. 17 of 1997 and its amendments of Act No. 15 of 2008 and The Occupation Health and Safety Act, 2003 both provide for the inspection of construction sites to ensure contractors' compliance to H&S provisions in their respective Acts. Moreover, the Engineers Registration Board Act No. 15 of 1997, and, The Architects and Quantity Surveyors Registration Board Act No.4 of 2010 do not adequately state the duties and responsibilities of engineers, architects or quantity surveyors in H&S aspects of the project. As a result, clients and consultants take part in construction H&S out of interest or experience. Some countries have regulations in place that prescribe clients and consultants' construction H&S responsibilities. The South African Construction Regulations of 2014 state, inter alia, the duties of the client, designer, and, principal contractor and contractors on a construction project. Similarly, the UK Construction (Design and Management) Regulations 2015 spell out the duties of the client in relation to arrangements for managing projects, information, and additional duties. In addition, the regulations stipulate duties of designers, contractors, and their additional duties and general duties of CDM co-coordinators.

Clients and consultants have roles in construction projects, which if well-articulated may contribute to improved H&S performance. Clients have a leading role as initiators of projects, and the H&S of projects may be enhanced through their involvement. Kikwasi (2009) states that clients' traditional roles in implementing H&S requirements have always been through the provision of personal protective equipment, welfare facilities, and insurance premiums. These roles have been

fulfilled by clients given that they are included in contract documents. Some studies have revealed alternative H&S roles to be assumed by clients. Said *et al.* (2009) point out that clients can achieve better project H&S performance by setting H&S objectives, selecting H&S conscious contractors, and participating in the H&S management process during construction. Ulang (2012) concludes that clients play a very important role in creating an H&S culture on any project and initiating H&S communication from the primary design development stage. The cidb (2009) emphasizes that in addition to compliance with the Construction Regulations, clients can enhance H&S performance of contractors through selecting contractors based on construction H&S practices and procedures, requiring bills of quantities to include itemized provisions for H&S, and specifying requirements for project-specific H&S management plans. Kikwasi (2009) reveals that clients' roles at the tendering and construction stages include ensuring that allowance for H&S is included in the tender documents; tender documents include a clear delineation of H&S responsibilities of the parties to the contract; the design team prepare a check list of possible hazards and ensure that it is given to the tenderers; the contract is let on the merit of H&S practices and awareness; awards are based on the responsiveness to H&S matters clause in the instruction to tenderers; a sound H&S Plan be one of the requirements for the award of contracts; they adhere to recommendations for contract award by consultants; contractors comply with the H&S plan and all requirements during construction; H&S is one of the primary agenda items of every site meeting; access to site is only granted to workers wearing the requisite personal protective equipment (PPE), and contractors prepare and update checklists of possible H&S hazards.

Architects and engineers as designers of buildings and structures have a duty to ensure their designs are healthy and safe. The concept of prevention through design (PtD) and designing for construction H&S for addressing construction worker H&S in the design of a project as advocated by Gambatese *et al*. (2008), and Bhattacharjee *et al.* (2011), and follow up thereon clearly inform of designers' responsibility for H&S in projects. Bhattacharjee *et al.* (2011) argue that considering the prolonged involvement from inception stage, architects and engineers can play an important role in identifying and mitigating potential hazards to construction workers. Ulang (2012) determines that designers contribute substantially to effective H&S communication by producing a healthy and safe design. He maintains that H&S information can be communicated during design development via meetings with project team members as well as by including notes, symbols, and highlighting to indicate hazards and risks on the drawings. The cidb (2009) argues that designers can influence H&S more through evaluating of tenders, deliberating project duration, and prequalifying or selecting contractors on H&S merits.

Quantity surveyors in their capacity as project cost experts and contract administrators have a role to play to ensure the project is delivered in a healthy and safe manner. A study conducted by Niemandt and Crafford (2011) reveal three specific H&S responsibilities for quantity surveyors which are: considering H&S through every phase of a project; suggesting to clients that contractors be pre-qualified in terms of H&S, and being able to evaluate the cost implications of H&S risks in design. They further concluded that the majority of the suggested responsibilities were ranked as important by quantity surveying professionals. The

cidb (2009) maintains that quantity surveyors can have a direct influence on construction H&S by compiling specifications that enable principal contractors to make adequate allowance for H&S and promoting bills of quantities that facilitate adequate allowance for H&S. As a matter of practice, quantity surveyors have been including H&S items in the preliminary section of the bill of quantities. However, if such an item is either not included or included, but not priced, neither the quantity surveyor nor the contractor will be responsible for the omission.

The participation of clients has yielded positive results in terms of construction H&S performance. Vadsman (2006) (cited in Kikwasi, 2009) reports that client use of "Model construction Site" where clients were involved in construction H&S of large infrastructure projects' reveals a significant decrease of working incidents and injuries in the Danish construction industry. Similarly, Said *et al.* (2009) disclose that the involvement of clients in H&S has increased in recent years and note some developments that include assignment of a client H&S representative to each project; clients participation in H&S incentive programs, weekly audits, detailed and constructive reviews of contractor H&S programmes; and inclusion of contractors on bid lists based on H&S performance.

2.2 Improvement of H&S performance in construction

Stakeholders in the construction industry need to continually improve its performance in terms of H&S. Researchers worldwide have devised various ways of improving the H&S performance of the industry. Rajendran and Gambatese (2009) developed and validated a Sustainable Construction Safety and Health (SCSH) rating system which provide an opportunity to rate projects based on the importance given to construction worker H&S, and the degree of implementation of H&S elements. They further explain that in order to optimize SCSH performance, a total of 50 elements should be implemented through the combined efforts of the project team. They listed three top elements which are: clear project H&S authority, responsibility, and accountability; employee empowerment to stop work, and contractor selection based on H&S. Bhattacharjee *et al.* (2011) evaluated nine H&S improvement approaches and determined that they all transfer the burden of responsibility to the contractors. Teo *et al.* (2008), Hinze (2005), and Lingard *et al.* (2013) measure H&S performance by using lagging indicators and leading indicators. Leading indicators assess the H&S climate in the form of management commitment, supervisory environment, workers' involvement and personal risk appreciation, work pressure, and training and level of competence. Lagging indicators are related to the end results of past projects and then primarily accident rates. Lingard *et al.* (2013) provide an update in terms of the development of a multi-level measurement method, which combines leading H&S performance indicators and H&S climate measures, which in combination with lagging indicators provide a more comprehensive analysis of H&S in the construction industry.

Choudhry *et al.* (2009) assessed H&S climate and determined that management commitment and employee involvement, and inappropriate H&S procedure and work practices were significant predictors of workers' perception of H&S performance. Okorie and Smallwood (2011) assessed the impact of rural migrant workers on construction H&S, and determined that management commitment

to H&S, competent H&S officers and provision of good drinking water contribute to an improvement in H&S. Similarly, a study conducted by Smallwood (2004) reveals that project specific plans for H&S, integration of design and construction in terms of H&S, and pre-qualification of contractors on H&S and also on quality can contribute to an improvement in construction H&S on Shell projects. Musonda and Haupt (2011) conclude that H&S performance improvement is unlikely without the improvement or change in the H&S culture. They further identify factors of culture to include leadership, involvement, procedures, commitment, communication, and competence. In addition, Agumba and Haupt (2008) determined that management commitment and involvement, training and resources, vision and policy, worker empowerment, project planning and supervision, and appointments to be the key enablers of H&S performance and an H&S culture improvement model.

2.3 Improvement of construction H&S performance and the roles of clients and consultants

Improvement of the performance of the construction industry in terms of H&S can be achieved through joint effort of the project team members namely client, consultant and the construction team (main contractor and subcontractors). Accordingly, contractors are always on site and can be instructed by either clients or consultants to comply with H&S requirements. However, consultants and client can issue instruction regarding construction H&S without relying on each other as long as they are acting within their mandate. A number of researches (Said *et al.*, 2009; cidb, 2009; Kikwasi, 2009; Bhattacharjee *et al.*, 2011; Ulang, 2012; Niemandt and Crafford, 2011) have determined roles of clients and consultants for performance improvement of construction H&S respectively. Similarly, authors such as Vadsman (2006) (cited in Kikwasi, 2009) and Said *et al.* (2009) have explained how participation of clients have yield positive results. However, these roles are to be fulfilled in isolation depending on the provision of country laws, mandate or interest. This study determines the roles that can be performed jointly by clients and consultants in the course of improving construction H&S. On the other hand, countries like South Africa and United Kingdom have regulations which prescribe duties and responsibility of clients and consultants in construction H&S, it high to determine how Tanzania is faring in the absence of such laws, regulations or bylaws.

3. RESEARCH METHODOLOGY

The study used a mixed method design which was conducted on cross–sectional basis for delegated at the time of the forum and follow up thereafter. The study population included architects, engineers, quantity surveyors, and others who were attending a Construction Industry Forum to celebrate 50 years of independence held from 5 to 7 September 2011 at Mlimani City Conference Centre in Dar es Salaam, Tanzania. The forum was organized by three regulating boards namely the Architects and Quantity Surveyors Registration Board (AQRB), Contractors Registration Board (CRB), and Engineers Registration Board (ERB).

A total of 2500 participants from all regions of the country attended the forum comprising of 826, 1050, 350 and 274 contractors, engineers, architects and quantity surveyors and others respectively. A sample size of 400 potential respondents was

estimated considering 200 from AQRB and 200 from ERB. Four hundred questionnaires were prepared and distributed to randomly selected respondents in two conference halls.

Data was collected using self-administered questionnaires and a review of literature. Out of 400 distributed questionnaires, approximately 200 were collected by the delegates which equates to approximately 100 per Board. At the end of the third day of the forum only 16 questionnaires were returned comprising of 10 from the AQRB, 6 from the ERB. As a result of the low response, the contact details of forum participants were sought from respective boards and approximately 100 respondents were contacted. 100 questionnaires were administered to identify contacts of which 32 were e-mailed and 58 were hand delivered. Out of 100 questionnaires, 13 and 25 responses were received in response to the e-mailed and hand delivered questionnaires respectively. The total number of questionnaires returned was 54, which equates to 13.5%. The questionnaires contained a list of roles to be assumed by clients and consultants in order to improve construction H&S performance extracted from various literatures. Respondents were required to indicate how they have been fulfilling these roles using a 5-Likert scale i.e. 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always.

The collected data was analyzed using the Statistical Package for Social Sciences (SPSS) statistical programme. Descriptive statistics and an independent-sample test were used to compute the respondents' profiles, ranking of roles, the level of experience and involvement in H&S improvement, and testing the significance of the results.

4. ANALYSIS AND DISCUSSION

The analysis and discussion of the main findings in this section include the respondents' profiles, ranking of roles played by clients and consultants, and assessment of involvement of clients and consultants in H&S based on the level of their experience.

4.1 Respondents' profiles

The study sought to establish the level of participation of the intended groups namely architects, clients, engineers, and quantity surveyors. The results indicate that the level of participation of was fairly distributed in terms of architects (35%), followed by engineers (24%), quantity surveyors (22%), and clients (19%). Furthermore, the experience of respondents were sought and categorized as less experienced and experienced indicating those with less and more than five years in the industry respectively. The results show that the majority (86%) of the respondents were experienced, which implies that they have been working in their respective capacities for more than 5 years.

4.2 *Roles played by of clients and consultants in construction H&S*

Table 1 presents the roles played by clients and consultants in improving H&S performance in construction in terms of a mean score (MS) between 1.00 and 5.00.

Table 1: Roles Played by Consultants and Clients

Roles	N	Mean score	Std. Dev	Rank
Ensure the contractor is complying with the H&S plan during construction	54	3.61	1.188	1
Ensure H&S is one of the main agenda items each project site meeting	53	3.45	1.170	2
Ensure a person responsible for H&S is appointed for a project	54	3.44	1.327	3
Include provisions in the tender /contract document to cover PPEs, welfare facilities, and insurance premium	54	3.31	1.286	4
Communicate anticipated H&S risks to the contractor	54	3.15	1.089	5
Include provisions in the tender /contract document for hazard identification and risk assessment	44	3.09	1.137	6
Ensure that contractors are prequalified on H&S merits	43	2.88	1.238	7
Evaluate tenders, recommend award, and award contracts on the basis of contractors' past and likely H&S performance	54	2.87	1.374	8
Conduct H&S audits	53	2.74	1.303	9

With the exception of the role of 'ensure the contractor is complying with the H&S plan during construction', which is ranked first, and interpreted as occurring between sometimes to often / often, the remaining MSs are $> 2.60 \leq 3.40$, which indicates the occurrence is between rarely to sometimes / sometimes. This is also confirmed by Phoya (2012) that the active participation of clients and design teams in the built environment in health and safety matters in Tanzania is yet to be realized. This finding is in line with the findings of research conducted by Musonda and Haupt (2008) that designers neither had capacity nor will to address H&S in the project. However, this is aggravated by lack of laws or regulations that prescribe H&S responsibilities for clients and consultants. This is echoed by Bhattacharjee *et al.* (2011) that role of architects and engineers to impact safety in construction project has not been fully used due to lack of motivating forces (legal, contractual, economic or regulatory). Among the roles rarely performed jointly by clients and consultants at tendering stage is ensure that contractors are prequalified on H&S merits; and evaluate tenders, recommend award, and award contracts on the basis of contractors' past and likely H&S performance which reveal deficiencies in procurement process that does consider H&S matters. As part of procurement process, these roles have been advocated by Smallwood (2004), Rajendran and Gambatese (2009), cidb (2009), Kikwasi (2009) and Said *et al.* (2009). Other roles listed by respondents are valuation of H&S provisions before honoring payment certificates, making sure there is an accidents register on site; ensuring that all workers receive H&S training before they are admitted to site, and conducting of adhoc site H&S inspections.

4.3 Involvement of clients and consultants in construction H&S based on the level of their experience

Table 2 indicates the involvement of clients and consultants in construction H&S for experienced and less experienced in terms of MSs between 1.00 and 5.00.

Table 2: Respondents' Level of Experience and Construction H&S

Role	Level of Experience	N	Mean score	Std. Dev	Levine's Test for Equality of Variances	
					F-Value	Sig.
Include provisions in the tender /contract document to cover PPE, welfare facilities and insurance premium	≤ 5 years	7	3.00	1.155		
	> 5 years	42	3.48	1.311	.946	.336
Include provisions in the tender /contract document for hazard identification and risk assessment	≤ 5 years	7	3.00	.577		
	> 5 years	34	3.21	1.200	5.391	.026
Communicate anticipated H&S risks to the contractor	≤ 5 years	7	2.57	.787		
	> 5 years	42	3.31	1.047	.526	.472
Advise the client that contractors be prequalified on H&S merits	≤ 5 years	7	2.71	1.113		
	> 5 years	33	2.94	1.273	.526	.472
Evaluate tenders, recommend award and award of contracts on the basis of contractor's past and likely H&S performance	≤ 5 years	7	2.57	1.813		
	> 5 years	42	3.00	1.325	2.035	.160
Report back to the client on the H&S merits of the contractor's tender from a cost planning perspective	≤ 5 years	7	2.00	1.528		
	> 5 years	33	2.64	1.342	.004	.951
Ensure H&S is one of the main agenda item each project site meeting	≤ 5 years	7	3.43	.976		
	> 5 years	41	3.56	1.141	.004	.951
Ensure a person responsible for H&S is appointed for a project	≤ 5 years	7	3.14	1.215		
	> 5 years	42	3.62	1.306	.092	.763
Ensure the contractor is complying with the H&S plan during construction	≤ 5 years	7	3.57	.976		
	> 5 years	42	3.79	1.116	.429	.516
Conduct H&S Audit	≤ 5 years	7	2.14	1.069		
	> 5 years	41	2.90	1.319	.733	.396

The results reveal that the more experienced respondents fulfill the respective roles more frequently than the less experienced respondents as in the case of 'Ensure the contractor is complying with the H&S plan during construction' (MS = 3.79 vs. 3.57) and 'Ensure a person responsible for H&S is appointed for a project' (MS = 3.62 vs. 3.14). Furthermore, analysis using the Independent Samples Test reveals that the level of experience has a significant impact in terms of include provisions in the tender /contract document for hazard identification and risk assessment role (sig < 0.05). This implies that in the absence of laws, regulations or bylaws in Tanzania that states obligations of clients and consultants in construction H&S, they get involved in construction H&S out of experience. This is in consistence with the findings of Phoya *et al.* (2011) that there was strong correlation between one's experience and risk perception and their conclusion that increase in experience attracts more consciousness on health and risk. Similarly, Ali (2006) (cited in Phoya, 2012) found that a perception of higher risk was associated with labouring experience. The finding also supports the work of Hare *et al*. (2013) who examined pictorial aids that can communicate simple hazards and controls and found that workers with less than 5 years' experience scored lower than more experienced workers. Likewise, Nielsen (2015) reveals that inexperienced young workers and some migrant workers tend to be non-compliant because of not being aware of H&S practices. However, other works such as that of Che Hassan (2007) and Irizary (2006) (cited in Phoya 2012) reveal that as workers get experienced they tend to be confident and ignore matters of H&S. Generally experience has both positive and negative effects to construction H&S. The two cliques of findings imply that with little experience workers tend either to disregard or pay more attention to issues of H&S. Likewise with experience workers tend to be overconfident which increase H&S risks in projects or vice versa.

5. CONCLUSIONS AND RECOMMENDATIONS

Despite the need to improve construction H&S performance, it can be concluded that clients and consultants are not fully contributing to improving construction H&S. This is partly aggravated by current laws and regulations in Tanzania that do not adequately address H&S duties and responsibilities of clients and consultants in construction. However, with increased experience in the construction works, consultants and their clients are getting involved.

The improvement of construction H&S performance should be a concern of every party involved in the procurement process from the inception stage to commissioning and subsequent operation. The paper therefore recommends the following:

- A review of the Occupation Safety and Health Act of 2003 to include H&S duties and responsibilities of clients and designers;
- A review of the Engineers Registration Board Act No.15 of 1997 and its Regulations and Bylaws to include H&S duties and responsibilities of engineers;
- A review of the Architects and Quantity Surveyors Registration Board Act No.4 of 2010 and its Regulations and Bylaws to include H&S duties and responsibilities of architects and quantity surveyors, and

- Clients and consultants need to be made aware of their roles and empowered to fulfill them.

5.1 Limitation of the study

This study was mainly affected by low response from the delegates which may be attributed to many factors such as the nature of activities of the event and that questionnaires were not piloted. As a result these findings cannot be entirely generalized. However, the study forms a baseline for further research on the subject matter.

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