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The health and safety implications of socio-cultural context for community construction projects in developing countries

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Community participation in construction during rural infrastructure projects in developing countries is encouraged by many non-governmental organizations. The health and safety aspects of this type of development model have not previously been adequately researched, however. The aim is to identify the socio-cultural factors that motivate community members to participate in construction activities which they perceive as hazardous during a case study of a water and sanitation project in rural Ghana. This is a step towards understanding how health and safety can be more effectively managed during community development projects. A qualitative approach has been taken, using interview, observation and reflection. It was found that the communal culture of the local context resulted in community members feeling pressurized to participate in hazardous construction activities. Local customary laws further compelled individuals as they were concerned they could be fined or arrested should they not fulfil their communal obligations. Further work is required to determine the boundaries within which findings apply but it is likely that there are implications for others managing community construction projects both in Ghana and further afield.

Keywords: Culture, Ghana, health and safety, participation.

Introduction

Many of the large non-governmental organizations involved in rural infrastructure projects in developing countries encourage the participation of communities during the construction phase of project implementation. On WaterAid projects, for example, 'Local people help with the building of wells and latrines by undertaking tasks like digging, collecting or providing materials, and putting fences around water points to keep animals away' (WaterAid, n.d.).

Both Oxfam and Practical Action have run schemes where members of local communities are involved in construction projects as labourers and given some basic training in the hope that the new skills they develop may lead to employment opportunities. In Kitgum Town, Uganda, displaced women gained construction skills while working as casual labourers

on a project aiming to create safe shelter for residents of surrounding villages who must sleep in the town at night (Clifton, 2005). Training during one Practical Action project, using unemployed young people to help construct housing for elderly members of their community, included setting out, trench excavation, footing casting, brickwork, hard core filling and roofing (Dongozi, n.d.).

The advantages of involving the community in their own development have been widely documented (for example see Robles-Morua *et al.*, 2009). Community involvement increases the chances of a successful project by ensuring project work truly meets the needs of the proposed beneficiaries while encouraging ownership of the project by the community (Narayan, 1993). Overall, community involvement encourages long-term maintenance of the implemented systems, improving the sustainability of the project (*ibid.*).

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There is limited literature exploring the construction management issues specific to projects utilizing an unpaid local workforce involved in their own development. A few exceptions include research looking at issues surrounding procurement and disbursement for projects with community participation (Gopal, 1995; Sohail and Baldwin, 2001) and Baldwin, and issues specific to monitoring and control of this type of project (Sohail and Baldwin, 2004).

Likewise, the health and safety implications of community participation in construction have not been well documented. One exception is an examination of health and safety practices of South African community construction projects carried out by Haupt and Smallwood (1999). They highlight a range of issues present in this type of project including a lack of training of community members, a lack of knowledge of legislation, lack of consultation with workers, among other bad management practices. They do not, however, explore the socio-cultural context that leads to challenges and opportunities for health and safety management.

This paper aims to fill this gap by considering the health and safety issues arising from the socio-cultural context of this type of development model using a case study of a water and sanitation project being undertaken in the Eastern Region of Ghana. The objective is to identify community members' motivations for involving themselves in hazardous construction activities. To do this it is necessary to identify activities community members themselves perceive to be hazardous so that the reasons participants decided (or not) to carry out these activities can be explored. Understanding the mechanisms which encourage unsafe behaviour is a critical step to comprehending how health and safety can be more effectively managed during community development projects.

Context

Laws and legislation

Many developing countries have health and safety legislation in place to protect workers but experience difficulties in implementing the legislation due to a lack of mechanisms for enforcing it (Cotton *et al.*, 2005; Kheni *et al.*, 2008). Ghana is no exception; as Kheni *et al.* (2006) note there are several issues with Ghana's health and safety legislation including a lack of financial and administrative resources, a lack of construction accident statistics and problems enforcing legislation due to a failure of small and medium sized contractors to register construction sites.

Currently, national level legislation is likely to have limited impact on development projects utilizing the

local community as a free labour source. Whereas developed countries often include protection for unpaid workers (for example the UK Health and Safety at Work etc Act 1974 applies to any company that has more than one employee and explicitly identifies a responsibility of all employers and the self-employed to protect people other than those at work), Ghana's Labour Act limits its scope of application to workers and employers (Labour Act, 2003: Part 1).

While national laws may not protect individuals working on community construction projects in developing countries, traditional governance and local customary law may be of great relevance. Of particular significance to community construction projects is the existence of Communal Labour Laws, which require community members to participate in work for communal benefit, which are enforced at the local level by traditional chiefs and elders (Ubink, 2008). Kheni *et al.* (2010) note the importance of local law for maintaining traditional values and ensuring they are enforced in society.

Socio-cultural environment

Geert Hofstede's cultural dimensions are useful for gaining a snapshot picture of some general attributes of a nation's culture. Following statistical analysis of over 100 000 questionnaires administered to IBM employees in over 50 countries, four dimensions were initially identified along which cultures could be characterized and compared on a *national* level (Hofstede, 1980). These were 'Power Distance Index', 'Individualism versus Collectivism', 'Masculinity versus Femininity' and 'Uncertainty Avoidance Index' (*ibid.*). A fifth dimension was later added, 'Long-term Orientation' (Hofstede, 1991) and most recently a sixth, 'Indulgence versus Restraint' (Hofstede *et al.*, 2010).

Many authors have found Hofstede's framework to be a constructive means by which to structure exploration of the links between national culture and health and safety culture (for example see Burke *et al.*, 2008; Mearns and Yule, 2009). The relevance of a region's cultural profile on health and safety management is examined in depth by Seymen and Bolat (2010). It is not within the scope of this paper to carry out a full review of each dimension and the implications for health and safety management. However, one of the constructs that differentiate societies is of particular relevance to this research, 'Individualism versus Collectivism'. Highly collectivist societies encourage individuals to put the needs of the group above their own personal priorities (Triandis, 1993). Some of the values associated with a high collective score include obligation to others, avoidance of conflict and maintenance of social harmony (Forbes *et al.*, 2011).

Seymen and Bolat (2010) assert that this has implications for risk perception and employee involvement in health and safety management. Health and safety in collectivist contexts is more effective when seen as a communal responsibility rather than the focus being on each individual ensuring their own safety.

Kheni *et al.* (2007) provide an example from Ghana, a strongly collectivist culture, where it was found that extended family social structures and collectivist values provide opportunities for health and safety management within construction companies. In the Ghanaian extended family, the head of the family has responsibilities to provide for and set a good example to the rest of the family—in the same way, the head of an organization should have responsibilities for the health and safety of his workers. The local context provided an opportunity for health and safety procedures to be understood and incorporated into daily work.

The relevance of collectivism and individualism for health and safety management has also been demonstrated by Baarts (2009) who found that preferences and attributes of individuals impact upon the way they approach safety and the risks they deem acceptable to expose others to. She suggests that, 'it is a common belief that the more collectivist preferences, the less challenge and opposition, and the more individualist the less social responsibility' (*ibid.*, p. 956). She also notes that in their extreme form, both collectivism and individualism can have negative consequences for overall safety of a group. Strong collectivism can lead to an unwillingness to challenge a dangerous group behaviour; strong individualism can lead to a failure to consider the safety of others during construction work.

Research method

The goal of the research was to gain insights into the factors arising from the socio-cultural context of community construction projects that motivate community members to engage in hazardous construction activities. As the interest was in the socially constructed realities that lead to particular behaviours a qualitative approach was deemed most appropriate.

In order to identify the motivations for engaging in dangerous activities it was first necessary to understand how the community perceived the hazards with which they were confronted. The hazards as perceived by the authors are discussed in the case study section below. However, it was not possible to simply ask the participants why they engaged in the activities identified by the authors as hazardous as it is possible that the participants would not perceive the activities as

hazardous. Engaging in a hazardous activity owing to unawareness of the danger present has implications for health and safety management of this type of project, but the focus of this research was intended to be on identifying the motivations for engaging in hazardous activity *despite awareness* of the danger present.

In order to deal with this issue a number of questions were included in the semi-structured interview that were intended to reveal insights into the participants' perception of what constituted a hazardous activity. A difficulty arose due to the technical nature of some of the health and safety terms that were not known to the participants or the translator prior to the research.

To address this a number of measures were taken during the interviews. First, some of the key terms were defined at the start of the interviews. The concepts of hazard and risk were defined and discussed along with a range of associated feelings such as being afraid, thinking something is dangerous and thinking someone might get hurt. In addition, as activities were discussed during the interview attention was paid to clarifying how the participant felt about the activity. They were asked to say whether they felt the particular activity could have resulted in injury or harm to themselves or others.

It was assumed that if the participant thought someone might get hurt, or if they felt afraid or worried, they perceived there to be a hazard. In this case, questioning turned to the reasons the participant had continued to undertake the activity despite their concerns.

Author Furber worked with the community for a total of eight months during the project, the last two months of which she spent living in the village. This allowed for extensive observation of, and informal conversation with, the community members. While much of the discussion in this paper is based on findings from semi-structured interviews carried out with the community, the knowledge gained through observation and informal conversation informed the design of the semi-structured interview schedule. The semi-structured interview schedule is included in Appendix A.

It should be noted that the guide was not adhered to strictly during the interviews. This allowed interesting topics that arose during the interviews to be followed up in more detail and meant questions could be omitted when it was felt that they had already been answered or were not relevant to the particular individual responding. Some of the questions present options for the participants to consider. For example, in the motivations section several options are listed in response to the question, 'Why do you undertake labour for the community?' The options presented are motivations identified prior to the semi-structured interviews. During the semi-structured interview the

participants were encouraged to add any other motivations they felt were relevant.

Case study: the village of Emem

The research was carried out via a case study of an ongoing community development project involving construction work. The project took place in a village located in the Eastern Region of Ghana called Emem.

Emem is a community of predominantly Ewe lineage with approximately 200 inhabitants. The village is led by a chief and seven elders; the chief of Emem in turn answers to the chief of Nkyenenkyene, a larger village situated about half an hour's walk away. The chief has implemented local laws at the village that require those of working age to carry out communal labour twice a week on Tuesdays and Saturdays. If for some reason a member of the community is unable to fulfil their labour obligations they can go and ask the chief and elders for permission to be excused. If members of the community refuse to carry out their communal labour obligations they are fined five cedi (roughly £2 at the time and equivalent to what some in the village earned after a day's fishing) for their offence. Persistent offenders are reported to the local police force who, according to local belief, will come to the village to arrest the guilty party.

At the time research was conducted a water system had been built, including a transmission system to transport water from the nearby lake Volta into the centre of the village to a water tank. The water tank sits on a masonry support to raise it just over 2m high. Some of the water from the tank is then treated to render it drinking water quality by being passed through a multi-stage filtration system consisting of a coarse gravel filter followed by a slow sand filter. Water can be collected from both tanks (the raw water tank for washing clothes and bathing, etc. and the treated water tank for drinking water) and water collection stations have been constructed at both water collection locations. A guest house was also built at the village to allow members of the project team and construction workers to stay at the village.

The project team consisted of author Furber, acting as engineer and project manager. The project was carried out under the auspices of Original Volunteers Ghana, an organization involved in a variety of development projects in the local area. The organization did not have any health and safety requirements or policies to follow during the construction work and so the health and safety management and culture were negotiated between author Furber and the community directly. Funding for the projects came from fundraising carried out in the UK; again there were no health and safety requirements associated with the funding source.

Author Furber's position as both researcher and project manager was advantageous because of the insights gleaned through maintaining a close working relationship with the community during the project. It also meant that when the semi-structured interviews were conducted there was an established rapport with the community. However, this meant there was a power differential between the researcher and participants; the impact of this on the community's responses to questions had to be carefully considered.

As the project was nearing completion when the interviews were conducted the impact of this power differential is limited; there was no need for the community to worry that their systems could be withheld should they give the 'wrong' answer to questions. Instances where researcher position may have impacted upon results were identified through incorporating researcher reflexivity into the data collection process and through consultation with the project's translator. These instances are highlighted where relevant in the results section below.

Participant selection

Twelve individuals were selected to participate in the study. Owing to the very small scale of the project, this constituted over 90% of the community members who regularly undertook communal labour on the project. Descriptions of the participants are given below. All names are pseudonyms to respect the privacy of the participants.

Awuku was the project translator who also owned the boat that the project team used to gain access to the village during the rainy season when the village could not be accessed by road. He came from a village about 20 minutes' journey by boat. He is also of Ewe ethnicity and can be considered an insider who knew many of the people living in Emem prior to the project commencing.

The chief, Kwami and Mawuli are village elders. There are seven village elders in total but the other four were not involved in construction work because of their advancing age. Kwadzo, Kwao, Kofi, Kwasi and Fafa are younger men of working age who were regularly involved in construction during the project.

Kwabla was the youngest participant, being only a teenager at the time the project was underway in the village. He took part in the project as he did not attend school and was therefore in the village during the day when the construction work was carried out.

The carpenter and the mason come from the same village as Awuku and were paid to carry out work that required skilled labour. They both worked at the village for significant periods during the construction work.

Hazards encountered during the project

While efforts were made to reduce the exposure of members of the community to hazards, the authors identified the following hazards as encountered by each participant:

- Trench digging, with a risk of excavation wall collapse, especially when working near to the lake
- Personal injury through use of sharp tools
- Dehydration
- Sun stroke
- Working at height
- Back and neck injury due to manual handling of heavy objects
- Skin irritation from cement
- Eye irritation from cement
- Foot injury from nails and other equipment left lying on the floor

Data analysis

Data consists of interview notes (including recording of direct quotes) and field notes including observations and reflections. All the data have been analysed using a process whereby a coding scheme has been developed through consideration of the research questions, preliminary analysis of the data and data write-up. Two descriptive codes were used to identify any words, phrases or sentences from the interview notes relating to both 'hazard identification' and 'motivations'. The 'hazard identification' data were further subdivided according to whether the hazard was 'unidentified', 'identified but ignored', or 'identified and mitigated or eliminated'.

The 'hazard identification' code is problematic owing to the methodological issues discussed above. Therefore the code was only used where the authors perceived a clear hazard that had been explicitly unidentified, ignored or mitigated against. A note was made of the hazard as perceived by the authors.

Where data were assigned the code 'motivation', a note was made regarding whether comments related to specific activities or whether comments were more general in nature. Where 'motivation' data linked to specific activities, data were subdivided depending on whether the participant considered the activity hazardous or not and cross-referenced against any corresponding 'hazard identification' code.

Results

A schedule of the semi-structured interview questions can be found in Appendix A. Where quotes from

participants are included in the sections below, the translated quotes were recorded verbatim during the interview.

Hazard identification

The participants were first asked introductory questions intended to identify the activities they felt were hazardous. A number of the responses given by participants were revealing in that they provided examples of the community failing to identify risks altogether. Examples were found during three of the semi-structured interviews. Kwadzo had been involved in constructing the roof for the guest house. During this activity he had to stand on the roof timbers approximately three metres above the ground to arrange the thatch that would form the rain barrier. With no harness system in place, this involved the hazard of falling from height. During his interview, however, he said that he did not think that being on the roof was dangerous.

During the trench digging activity to lay the transmission pipe which would carry water from the lake to the village an incident occurred where the trench was dug too close to the lake causing the trench to flood. Members of the community were working in the trench, which was around a metre deep at the flooded location. This led to a hazardous situation that could have seen the walls of the trench collapse; this was arguably the most serious incident that occurred during the project. Despite this, two men involved in the incident explicitly failed to identify the hazard. Kwasi said that digging by the lake is not dangerous and the chief said that when the water was coming into the trench he didn't think, 'anything bad about it'.

In addition to the examples of failure to identify hazards, a number of the participants made comments that revealed a tendency to either ignore or accept hazards that had been identified. Mawuli made the general statement that he had never said he wouldn't do something because he felt it was dangerous. Kofi, who was involved in building the roof to the guest house with Kwadzo said that on one occasion he hadn't been feeling well but had still worked on the roof. He understood that it was dangerous to work while unwell but had proceeded to anyway, ignoring the hazard. He also said that if you decide to do something you have to accept the risk.

Awuku made the general observation that, 'Sometimes you die but sometimes you don't'. After further questioning this was interpreted as meaning he was prepared to risk death for the sake of the project. Kwami made a similar comment when he said that he didn't expect to get an injury during the project but if he did he didn't mind. (Though this second comment

should be treated with caution as it is possible that this could be interpreted as meaning that if he got an injury he would not blame the interviewer.)

Throughout the interviews only one person made a comment that implied an attempt to mitigate or eliminate potentially hazardous construction activities. Kwami said that if an activity was dangerous he would try to find a means to make it safe. He also said that, 'If I will die, I will not do the work'.

Motivations

All 12 participants answered questions about their motivations for working on the project. Where participants had identified their involvement in a dangerous task they were asked about their motivation for undertaking that particular task. Where participants had not identified any tasks they found particularly dangerous they had been asked more generally about their motivation for working on the project. The two paid labourers, the chief, a young boy Kwabla and the research translator Awuku, have slightly different circumstances from the others and their motivations are discussed separately in the section entitled 'Special cases' below.

Three factors arose during informal conversations with the participants preceding the semi-structured interview that seemed pertinent to the motivation of community members to take part in construction work. These were 'feeling obliged to in order to comply with local communal labour laws', 'concern over other members of the community thinking badly of them if they did not take part' and 'wanting to improve their communities'. During the interview the participants were asked whether there were any further reasons they undertook communal labour and were then asked to rank the factors in order of relevance to themselves.

Of the seven 'typical' participants, all said that the three factors already identified were relevant and five said they did not have other motivations for undertaking community work to add to the three listed (Kofi, Kwao, Kwami, Kwasi and Mawuli). The other two participants added one further motivation each: a fear of arrest (Fafa); and the fact that their fathers have always done it (Kwadzo). Kwadzo, in an informal conversation following the interview, also highlighted the fact that he often undertook work as a favour to somebody. In the case of the project work it was if Awuku, his friend, asked him to work. It was observed that Awuku, who was widely liked among the community, was able to encourage some members of the community to work outwith communal labour hours when they had previously said they would be unavailable.

All seven participants rated, 'I want to improve my community' as the most relevant to why they undertake

labour for the community. Four then cited, 'I have to it's the law' as the second most relevant factor (Kwami, Kwao, Mawuli and Fafa) and three cited 'People will think badly of me if I don't' (Kwadzo, Kwasi and Kofi).

Following this ranking exercise the participants were asked to answer some open-ended questions about their motivations for undertaking communal labour they perceived to be dangerous to see if any additional factors arose.

Motivation: others thinking badly

Six of the seven typical participants were concerned that other people in the village might talk about them if they did not participate in communal labour. Kofi said that he thought people would talk about him if he couldn't do communal labour; he also said that he was a hard worker and didn't want anyone to say otherwise about him. Kwao also said that he thought people would speak badly of him and insult him if he didn't attend communal labour.

Kwasi and Fafa said that people would talk about them if they did not undertake a communal labour task even if the work was dangerous. Kwadzo noted that he wouldn't be able to stop a task if people started to complain about him and he would continue to try for a bit longer. Kwami pointed out that the community did not have a formal system for recording who was helping with communal labour but they noticed those who were not.

The seventh participant, Mawuli said that he was not worried about people speaking badly about him because he has never said he won't do a task because it is dangerous. He did agree that 'people thinking badly' was a motivation for undertaking communal labour in the ranking exercise above however.

Motivation: issues with the law

Kofi, Kwao, Kwasi and Kwami all said that they would have problems with the local law if they failed to undertake communal labour. Kofi said that he would get into trouble if he could not work and that even if work was dangerous the chief and elders could still arrest him. Kwao said that if you do not do something because you think it is dangerous the elders will arrest you or fine you. Kwasi also said that he would be fined if he did not work even if the work was dangerous. Kwami said that the fine for not working was five cedi.

Conversely, Kwadzo said that it was possible to stop without breaking the law. Kofi said that if you were ill it was possible to ask the chief to be excused from communal labour that day.

Motivation: improvements to the village

Mawuli, Kwao, Kwadzo, Kwasi and Kofi all said that they would be more prepared to undertake dangerous tasks if they could see the clear benefit and importance of the task for the community.

Special cases

The project carpenter and mason were expected to have different motivations for taking part in the project work as they were not members of the community and would not benefit from the project other than from the wages they earned for their labour. Both the carpenter and mason identified their wages as the key motivator for undertaking work for the project and the mason said that if work was dangerous he would simply increase the price to make accepting the danger worthwhile.

Kwabla was distinct from the other participants in that he was still of school-going age and therefore communal labour was not compulsory for him. When answering the ratings question he therefore disagreed with two of the factors, 'I have to it's the law', and 'people will think badly of me if I don't' but agreed with the factor 'I want to improve my community'. He added to this an additional motivation that people would think 'good' of him if he helped on the project. He also noted that he is the only boy of his age not at school and therefore he would prefer to come and work on the project and be with the men rather than on his own. He also said that he was interested in what was happening with the project and often came to help out of curiosity.

Awuku was the translator for the research, for which he was paid, but when not required for translation he often joined the men from the community in labour out of choice. In his words, 'Our arrangement was to be translator and boat man but I didn't think of it like that. I just want the project to improve.'

In his interview he talked of the responsibility he felt to encourage others to work on the project, '[The project] has come to help the Ghanaians and I have to show them the benefit the work can bring. Sometimes people do not understand the benefit. I brought you here and if others see me working even though I'm not from here they will think they have to come and help.' Guilt was another factor in his motivation, 'I am hard worker and if I see someone is doing some work and I am not involved I don't feel right. I feel guilty because of how I'm brought up.'

Lastly, it is clear from Awuku's interview that social status is also an important feature of communal labour. This is apparent when he discusses what would happen if he were to die working on the project, 'People will

remember me if I die working hard on a project like this. Maybe people will publish in many places.' By 'publish', he was referring to the widespread publicity that those who have been well-respected members of the community receive for their funerals.

Like Awuku, the chief noted the importance of his position when he said that he has to set an example for the rest to see so that they will work on the project. He also demonstrates the responsibility he feels when he says, 'The elders chose me to be Chief and therefore I have to work hard and do the dangerous work before the others.' It was observed during the project that the chief was often most involved during the more hazardous activities, taking up the more dangerous role and sending members of the community to do other jobs.

Summary of factors

The following list compiles all the factors that came out of the interviews explaining motivations behind the participants' involvement in community construction work:

- Feeling compelled to work for fear of arrest or being fined for infringement of local laws
- Concern about being spoken about badly by other members of the community
- Wanting to improve facilities within the community
- Following in the footsteps of fathers and ancestors who have always contributed to communal labour
- Interest in what is happening in the village
- To gain respect from others in the village
- To feel socially included in village life
- As a favour to a friend
- To avoid a feeling of guilt if others are working hard
- To set an example to others and encourage them to work

Discussion

The results provide evidence that some hazardous activities were undertaken simply through community members' lack of appreciation of the danger present. This supports the findings of Haupt and Smallwood (1999) and is evident from the interview quotes such as, 'I don't think being on the roof is dangerous', and, 'When the water was coming when they were working I didn't think anything bad about it.' In both instances the participant is discussing activities which had clear hazards—in the first case fall from height

and in the second excavation wall collapse. In both instances the participants clearly state they do not perceive there to be danger involved in the activity.

Owing to the methodological issues associated with terminology and translation discussed above, it is difficult to assess the extent to which hazards were not identified. However, the above quotes make it clear that apparent lack of awareness did account for at least some of the willingness to engage in hazardous activities.

Evidence was also presented for times during the construction work that the community members had identified risks that they had chosen to either ignore or accept. For example, one man described the way that he wasn't feeling well but still chose to work on the roof. He described the way that if you decide to undertake work you have to, 'accept the risk'. Further participants made more general comments alluding to the need to accept risk. This indicates that there are motivations and/or pressures at work that encourage members of the community to undertake activities which they know to carry an element of risk.

The only participant to make reference to their own ability to mitigate or eliminate risks by finding another way to carry out hazardous activities was Kwami. It should be noted, however, that Kwami is an elder of the village and it is possible therefore that he is better positioned to take control of his own and others' safety during communal labour than are the 'typical' participants.

The two paid skilled labourers identified receiving payment as the key motivator for their involvement in construction work and the mason said that he would be prepared to carry out work that he considered dangerous but would increase the price according to the additional risk he perceived present in the task. This finding is in line with the findings of Kheni *et al.* (2010) who noted the economic situation in many developing countries means that, 'Many site workers are content to earn better wages under poor OH&S [occupational health and safety] working conditions.' They identify cheap sources of labour and the low socioeconomic status of workers as key barriers to improving health and safety in developing countries (*ibid.*).

One of the motivations expressed by participants was a desire to improve their community. This was a motivation that everyone interviewed agreed with when it was suggested by the interviewer during the ranking exercise, but which was less often brought up in open-ended questions. While most people in the village did seem to have a genuine desire to improve their community, this did not seem to be a key motivating factor. It is possible that the participants felt that agreeing with the factor would constitute the 'correct' answer, the answer they felt the interviewer wanted.

Many of the other motivations for working appear to originate in the social and cultural context of the village and reflect a collectivist attitude—in particular the fact that participants felt compelled to continue with work they felt was dangerous if others in the community began to think or talk badly of them or because they would gain respect from the community for their efforts.

Risk is viewed as an integral aspect of development, accepted by the community members' fathers and ancestors and demonstrated by the participant who rejected the need to make methods safer because, 'Our fathers have always done it'. Refusing to accept the risk is akin to failing to carry out social responsibilities and can therefore leave the refuser susceptible to social disgrace. For many the social risk is of greater importance than the risk to personal harm of carrying out a particular task.

This mirrors Baarts' (2009) analysis of the dilemma faced by the health and safety representative during her ethnographic fieldwork. The representative was faced with the task of removing a lamp on a jib arm which had broken loose, a job that fell to him under his responsibilities as health and safety representative. His physique, however, was such that he would not be able to wear the harness that would usually have been worn to go up in the carrier and fix the lamp. He went up without the harness, demonstrating that his desire to fulfil his responsibility was greater than his concern for his safety. Noteworthy in this instance was the fact that his behaviour did not have implications for other members of the group, it was only he himself who was put at risk.

Children from Emem are brought up from a young age to conform to communal values, as reflected in one participant's expression of the guilt he feels when he sees someone is working, which compels him to go and help even where work is hazardous. Adults in positions of responsibility set a 'good' example to the children and other members of the community by undertaking dangerous work themselves, thereby demonstrating their commitment to the village and their personal sacrifice for the greater benefit of everyone. Social etiquette also requires individuals to work when requested by a friend or family member.

None of the participants identified, 'learning new skills' as a motivation for taking part in construction activities. This is an interesting result as the literature identified 'learning new skills' as a key outcome of community involvement in construction (Clifton, 2005; Dongozi, n.d.). It is possible that the initial approach of the project team plays a big part in setting the expectations of the community for the benefits the project will bring. In the case of this research, communities were approached with the idea that they

could gain a water or sanitation system for their community if they were prepared to put effort into the construction. In the case of the Oxfam and Practical Action projects individuals may have been approached with the promise of increased employment opportunity through the skills learnt through their construction work efforts.

Local laws reflect and enforce the communal values held by many in the community and provide the means by which individuals can be fined or arrested if they do not adhere to social duties and carry out communal labour. This seems a particularly problematic aspect of construction management when construction is carried out by unpaid community members on behalf of their own village. Employees engaged in paid construction work do have some rights under the legal framework, despite the difficulties that exist as discussed above. In the case of the unpaid community construction worker, they are not explicitly covered by national legislation that could protect them but are exposed to local laws which in the most extreme cases could oblige individuals to partake in dangerous construction activities.

Limitations, recommendations and further work

A limitation of the research is the small sample of data collected from one project in a very particular context. The extent to which findings can be generalized to other contexts is not obvious.

One of the key findings of the research was the implications of local laws for health and safety management during community construction projects. The finding presents a serious barrier for safe construction process. A limitation is found in the highly variable nature of local laws; it cannot be assumed that the same laws will be encountered in construction projects in the next village, never mind other countries in Sub-Saharan Africa. Nevertheless, the finding is significant as it raises the issue of local laws as something that needs to be explored and considered when engaged in community construction projects in sub-Saharan Africa.

Other motivations found were suggested to be associated with the collectivist culture of the community at Emem. It is not possible to determine from this work alone whether these cultural characteristics should be attributed to the community as Ewe, Ghanaian or African. Hofstede works at the national level but notes that variations occur within countries and similarities occur across regions (Hofstede *et al.*, 2010).

That said, the research highlights a range of issues which development practitioners and engineers should be aware of. It is recommended that professionals

engaged in this type of construction work keep in mind the findings of this research and consider the relevance for the particular context of their own projects. It is thought that other construction projects of this nature would benefit from the project managers taking the time to identify the motivations and pressures that encourage engagement in unsafe behaviour. This is a necessary first step to planning ways to reduce these pressures.

It is recommended that projects, such as the one at Emem, in which community members are concerned that they may be arrested if they do not undertake hazardous construction work be managed particularly carefully.

Further work is required to address the issue of ability to generalize highlighted above. Undertaking similar research in more locations would help to build a more complete understanding of the range of factors that motivate individuals to engage in hazardous activities during community construction projects, as well as how the factors vary geographically and culturally. In addition, ways of adapting health and safety management frameworks to reduce the pressures placed on community members during this type of project need to be explored.

Conclusions

The context within which community construction projects are undertaken presents specific challenges for health and safety management. The aim of this research was to identify the motivations that cause community members participating in construction to engage in hazardous activity despite awareness of the danger present. It was found that the communal culture of the local context resulted in community members feeling pressurized to undertake construction activities even when activities were perceived as dangerous. Local traditional laws were found to be the mechanism through which community members were obliged to take part in hazardous activities. While the research is inconclusive about the boundaries within which these findings apply it is likely that there are implications for others managing community construction projects both in Ghana and further afield.

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Appendix A

Semi-structured interview guide questions

Were you worried that you would suffer any injuries whilst working on the construction project at your village?

Before starting any of the job activities did you think about how you might get hurt or how others might get hurt?

Can you think of an example of an activity during the project where you were worried someone might get hurt?

If yes—Did you participate in these activities?

If yes—Why did you participate?

If no—Why didn't you participate?

If no—Can you say anything about why you weren't worried about injuries?

Did you do anything during the project to try to protect yourself from being injured?

What could you have done to prevent yourself from becoming hurt during the project?

What else could I have done to prevent you from becoming hurt during the work?

Controls

If something is dangerous what can you do to stop yourself or someone else from getting hurt?

During the construction work did you wear any of the personal protective equipment provided?

If yes—Which items?

Why did you wear that item?

Did you find the item comfortable?

Is there any equipment you chose not to use? Why?

If no—Why did you not wear the personal protective equipment?

Religion questions

Which of the following apply to you?

God (or the spirits or my ancestors) will decide whether I am safe or not so there is not a lot of point in wearing the safety hat and boots, etc.

Even though God is taking care of me I have to use the PPE.

It is me and/or my community who will keep me safe, not God.

Motivations

Why do you undertake labour for the community?

I have to it's the law.

People will think badly of me if I don't.

I want to improve my community.

Other.

If you decide some work is too dangerous and do not do it what will other people in the community think of you?

If you refuse to do something because it is too dangerous will you get into trouble for breaking communal labour laws?

Are you more likely to do something risky if you think the work is very good/needed for the community than if you do not think it is important?

Job selection

Can you choose what job you do for communal labour?

(For example, when fixing a new roof who decides who will go up onto the roof and who will stay on the ground?)