

CHAPTER

INTEGRATING HEALTH AND SAFETY INTO LABOUR-ONLY PROCUREMENT SYSTEM: OPPORTUNITIES, BARRIERS AND STRATEGIES.

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SUMMARY

Integration of Health and Safety (H&S) into procurement is a proactive approach to improving H&S culture in project development processes, more effective than reactive and active strategies. Nonetheless, procurement approaches that support H&S culture has received limited attention in construction research. This paper examines Labour-only Procurement System (LoPS) towards eliciting key barriers, opportunities and strategies for incorporating H&S into this growing procurement approach. Systematic review of literature is the main method of the study. Findings suggest clients are highly involved in LoPS. They control and monitor objectives including H&S. We argue that extant clients' approach present a mixture of opportunities and barriers to facilitating robust H&S outcomes in construction projects. This is because in LoPS, inexperienced clients have unreserved rights to undertake leadership responsibilities and this often compromise H&S outcomes of their projects and projects environment. We also found that traditional contract documents, in the ways they define stakeholders' roles and responsibilities, remain barriers to integrating H&S into LoPS. This is because these documents have been the tradition long before the industry commenced the renewal of its efforts at promoting H&S culture. One the other hand, incorporating H&S in LoPS triggers insights from cost-effectiveness H&S strategies and H&S culture also benefits from risk-benefit transfer between construction contract parties. LoPS encourages early-stage collaboration and effective negotiation that could lead to appropriate revisions to the definitions of H&S responsibilities of contract parties. Conclusions of the study are drawn from robust conceptual theories in a way that inspires empirical studies.

Keywords: Health and Safety, Labour-only Procurement System (LoPS), project success, risk-benefit transfer

Introduction

Health and Safety (H&S) records of the construction industry is very poor and can be seen from industry reports. For example, industry data published by Health and Safety Executive (HSE) (2018) show that the construction industry of Britain recorded 38 fatal injuries in 2017/2018, the highest across all the industries. The annual average of fatal injuries between 2013/14 and 2017/18 is 39. Again, this is the highest across all the industries. Although many Developing Countries (DCs) lack transparency and adequate data to trigger definitive conclusions on the state of H&S issues in their construction industries (Umeokafor 2018a), research studies have reported higher safety incidences in DCs than in developed countries. In particular, a study by Tadesse and Israel (2016) on 504 construction workers in Ethiopia shows the most prevalent causes of construction injuries are cutting (66.3%) and falling (28.5%). The study also shows that majority of workers (83.9%) who worked for up to two years did not use personal protective equipment.

According to Eriksson and Westerberg (2011), strategic use of procurement often influences project delivery outcomes significantly. This can be extended to mean project success, including project's H&S outturn situation, which can be shaped by steps taken by project stakeholders at the preconstruction stage. Extant studies have shown how this can happen in various ways. These include ingraining H&S into procurement of construction projects through evidence-based approaches (Deacon and Smallwood 2016; Wells and Hawkins 2010). Some studies have identified designing for safety (DfS) as another appropriate approach (see Gambatese 2013) also. In particular, Wells and Hawkins (2010) argue that where stakeholders' H&S measures are inadequate, appropriate procurements strategies and contract documentations have the potential to improve H&S outcomes in construction projects. In addition, according to Gambatese (2013), proactive measures such as DfS and other approaches aimed at integrating H&S into procurement and overall management of organisations are more beneficial to projects than reactive approaches where stakeholders attempt to correct impacts of post-incidents. The author argues that when H&S strategies are integrated early into the project lifecycle, efforts to prevent and reduce risks are likely to be efficient and cost-effective. Smallwood (1998) concludes that health and environmental practices support situations where procurement systems and practices influence safety.

Despite a seeming consensus between researchers that procurement improves H&S outcomes in construction projects, the H&S records of the industry have remained relatively high. Many studies have attributed this to inadequate research. For example, Wells and Hawkins (2010:5) claim that '... the use of procurement as an instrument to promote improved (H&S) practices among suppliers has received little attention'. Deacon and Smallwood (2016) identify paucity of normative literature relating to 'procurement and H&S' as another issue. In Umeokafor's (2018b) review of construction H&S research in Nigeria over a 36-year period, no study on 'procurement and H&S' is evident. Limited studies available on procurement and H&S include Deacon and Smallwood (2016), Mahamadu et al. (2015), Smallwood (1998) and Wells and Hawkins (2010). Their studies have mainly covered traditional procurement generally. Consequently, it can be argued that there is limited research on H&S and procurement practices, from the sub-Saharan African perspective.

Several extant procurement methods exist for a reason: procurement approaches influence project success in various ways. In addition to traditional procurement systems used in building construction, other variants such as design and build, construction management,

LoPS, direct labour and management contracting have been shown to impact project outcomes differently (Ogunsanmi 2015).

LoPS is a unique approach in which clients provide materials whilst contractors provide labour (Akinkunmi *et al.*, 2018; Hardy 2013; Ogunde 2011; Ogunsanmi 2013 a&b). Clients are responsible for project coordination, supervision and quality control (Hardy, 2013). Evidence in Ogunsanmi (2013a&b) suggests that LoPS is popular in DCs, including in sub-Saharan African countries such as Botswana, Kenya, South Africa, Uganda and Zimbabwe. Akinkunmi *et al.* (2018) and Ogunde (2011) have reported about LoPS in Nigeria, while Hardy (2013) has reported about LoPS in New Zealand. A key finding by Ogunde (2011) suggests a growing popularity of LoPS amongst construction clients, in that 58 percent of respondents in the study preferred LoPS ahead of other procurement approaches such as traditional procurement method, design and build, project management, construction management and direct labour.

While LoPS is commonly practised in sub-Saharan Africa, its impact on construction H&S management in the region is less known. In addressing this research problem and gap in knowledge established so far, this study examines LoPS by identifying the challenges, opportunities and strategies for optimising H&S outcomes in LoPS. Architecture and characteristics of LoPS are reviewed. Merits and demerits of LoPS are discussed also. Key opportunities and barriers to H&S in these are discussed. Conclusions are drawn on the implications of integrating H&S into LoPS, towards maximising H&S outcomes in project outcomes.

Conceptual Framework

Health and safety in DCs

In Africa, H&S discourse has continued to emerge. The situation is similar in most DCs. While H&S adoption rates in many DCs are considerable but episodic, construction H&S in DCs is emerging. Low level of compliance with H&S laws has been reported in other studies also. For example, Annan *et al.* (2015) found that despite several regulatory provisions regarding incidence reporting, victims seldom report incidents as appropriate in Ghana. Tadesse and Israel (2016) report injury information in Ethiopia is rare. Poor culture and regulation are rife; however, other studies have reported issues relating to institutions such as regulatory issues and inadequate policies in DCs such as Nigeria, Ghana and Ethiopia (Annan *et al.*, 2015; Tadesse and Israel, 2016). Despite these, appropriate discussions and stakeholders' commitment to affirmative actions on the need to improve construction H&S continues to advance in many DCs (Umeokafor 2017, 2018a). For example, whilst the Nigerian construction industry has had no local H&S legislation, contractors often deploy H&S regulations and standards that they have adopted from countries such as Germany, United States, China and United Kingdom (Umeokafor 2017). The author shows communities' influence and clients' contribution to H&S outcome in construction projects.

Procurement and LoPS

Variants to traditional procurement systems are triggered by different situations. For example, according to Akinkunmi *et al.* (2018) and Ogunsanmi (2015), LoPS became prominent due to clients' quest to save on construction cost during an economic downturn. In particular, Ogunsanmi (2013b) reports how Nigeria's economic downturns between 1980s and 1990s forced project owners to expand the scope of the LoPS from repairs, maintenance and refurbishments to new projects. Akinkunmi *et al.* (2018) claim persistent dissatisfaction of clients around projects' target costs, durations and stipulated quality catalysed increased

quest to save cost through LoPS and other procurement systems such as direct-labour. A similar finding is reported in Hardy (2013) where in New Zealand, LoPS is used to save cost and to maximize utility and value for money.

How LoPS works has been described in the introduction. Further to this, LoPS involves some robust collaboration between designers, clients, contractors and subcontractors (Ogunsanmi 2015). LoPS's tender procedures can be open, selective and negotiated. Ogunsanmi (2015) found that negotiated tendering of LoPS is most prominent. The author found that negotiated tendering was used in 88 per cent of the projects surveyed in the study. Eighty-eight per cent of these were for new projects; 12 per cent were for refurbishment projects; 96 percent were building projects; 4 per cent were for civil engineering. Akinkunmi *et al* (2018) show that LoPS suits small private projects such as residential buildings and minor alteration or modification works than large projects which require intense capital and high technical inputs. Private clients own these small projects and Umeokafor (2018a) found that they are less involved in H&S than public clients. They are, however, more involved in informal procurement activities than public clients (Umeokafor 2018a). This underpins the case of improving client involvement in H&S through integrating H&S into LoPS.

Methodology

The research adopts a systematic review of literature. 'Labour only procurement' and 'labour only contract' were the key themes of the review. When these keywords were searched as exact keywords 'in the title of the article' but to exclude the citations on Google Scholar in June 2018, the search returned only four relevant papers. When the search scope was expanded to the exact keywords 'anywhere in the article' excluding citations, 19 papers were found on 'labour only procurement', 85 on 'labour only contract'. Only one of these is relevant to this study. The article was added to the four articles found through the initial process. These were complemented by the citation search approach where the references of papers and books are searched for 'leads' to articles that can be used. In all cases, the title and abstracts were scrutinised for relevant papers. The relevant ones were reviewed for manifest and latent meanings in line with the objectives of this study.

Akinkunmi *et al.* (2018), Ogunsanmi (2015) and Ogunsanmi (2013 a&b) are the relevant four papers from the first literature search. Ogunde (2011) was added from the mentions-search, whilst Hardy (2013) and Fagbenle (2010) were added after citation search and scrutiny. All the articles were on Nigeria except one. None of the articles was indexed in Scopus or Social Science Citation Index. None of the papers cover the interconnection between LoPS and H&S. The few studies that cover 'Procurement and H&S' have been outlined in the introduction of this study. Little attention to LoPS in normative research is evident. Additional search of other databases may have provided more results, however results from this may be insignificant as most crucial scholarly databases are indexed in Google Scholar.

Results and Discussion

Characteristics, merits and demerits of LoPS and opportunities for H&S

Results of the content analysis are presented in Tables 1 to 3. Table 1 shows the characteristics of LoPS. 'Them and us' attitude is a common characteristic of LoPS. The phenomenon is a common cause of disputes between project owners and contractors in fragmented procurement methods. In LoPS, however, it improves the relationship amongst members of the project. Another attribute of LoPS is that clients are in firm control. The high level of their involvement and control means clients are assumed to possess appropriate experience and competence in material sourcing and handling. When clients lack experience

and competences yet provide pivotal leadership roles, project's outturn situations (including H&S) are likely to suffer. While designers may design for safety, client's quest to maximise value for money may compromise H&S standards due to optimism bias and a deficient confidence.

Table 1: Characteristics of LoPS

Characteristics	Descriptions
• Moderate or higher level on diversity of responsibility	When clients engage in robust collaborative relationships with contractors, they are able to diversify their responsibilities and accrue value-adding savings (Akinkunmi <i>et al.</i> 2018, Ogunsanmi 2015).
• Varied level of client involvement	Clients can accrue benefits from varying degree of project involvement – could be high, moderate or (Akinkunmi <i>et al.</i> 2018, Ogunsanmi 2015).
• Client satisfactory-level of cost control and monitoring	Opportunities abound for clients to control and monitor cost and quality (Akinkunmi <i>et al.</i> 2018; Ogunsanmi 2015).
• Client control of building process and parties during construction	Clients are able to control construction processes (Akinkunmi <i>et al.</i> 2018). They are able to control sub-contractors than in the traditional procurement approach (Ogunsanmi 2015).
• Client's opportunity to monitor cost of quality	Supply of substandard material is reduced (Akinkunmi <i>et al.</i> 2018). Contractors are able to concentrate on labour as clients alleviate the burdens of supply chain. Clients benefit from cost of quality as they are able to secure their utility in material supply and monitor quality of workmanship.
• High level of flexibility	Clients are able to make changes alongside other procurement methods (Akinkunmi <i>et al.</i> 2018). They can vary original design and structure of control at minimal costs (Ogunsanmi 2015).
• Opportunities for negotiation	Majority of LoPS projects were procured through negotiation – Ogunsanmi 2015 found 83 per cent of respondents used LoPS.
• Completion are shorter	Ogunsanmi (2015) and Fagbenle (2010) found fewer LoPS projects experienced schedule overruns compared to traditional procurement approach
• More propensity for confrontation	Ogunsanmi (2015) found LoPS generates more claims than in traditional procurement – the authors found 64 percent in LoPS compared to traditional procurement's 44 percent.
• Influence on selection of trade contractors	Client can significantly influence the selection of subcontractors.

It is prudent that clients and designers are able to make considerable inputs regarding the strategic roles of H&S in procurement (Umeokafor 2018a). However, H&S may attract a cost burden that clients often underestimate. Smallwood (1996) argues that contractors who make generous provision for H&S in their bids often stand the risk of losing to a competitor who is less committed to H&S standards. With the high level of clients' involvement and control that characterise LoPS, a logical question to ask is how can H&S be incorporated in LoPS for maximum outcomes? In countries like South Africa where clients have statutory duties relating to H&S, there are straightforward answers to this. However, in Nigeria where there are no local H&S laws, strategies have to be soft and creative.

Clients' high level of **control** in LoPS (see Table 1) implies that H&S is overly dependent on clients' willingness and knowledge depth. As explained earlier, this can be a barrier. On the other hand, a high level of clients' **involvement** in the development processes of projects and

their desire to optimise value for money imply that clients are keen to share risks. This is contrast to traditional procurement method where clients transfer all the financial risks for construction to the contractor. The position of normative literature is instructive regarding the opportunities presented by clients' willingness to situate their risk sharing commitment in a way that helps them safeguard their interest rather than seeking to avoid risks and paying a heftier price for only a little outcome instead (Deacon and Smallwood 2016).

Trade-offs between clients' ownership of risks in LoPS and the traditional approach to risks transfer to contractors are important. The benefits that accrue to clients as they procure materials can be reinvested into how contractors make the best of project situations to maximize work quality and H&S deliverables (Wills and Hawkins 2010). This approach presents a different view to common views in normative literature where clients are portrayed as though they are impaired by the economic gains that accrue to them from apparent material procurement and their limited involvement in H&S costs. Rather, it suggests that there are additional benefits for clients to consider their strategic transfer of benefits in exchange for added H&S outcomes and improved quality costs. Outcomes from this are best when this starts from the prequalification stage through tender action. Client involvement at this stage presents opportunities to analyse contractors' H&S performances in the past and their current potential to achieve exceptional outcomes on new projects.

Merits of LoPS are presented in Tables 2. Certain attributes of LoPS can be interpreted as merits and demerits. For example, opportunity to negotiate is an advantage in LoPS (Table 1), and could be a hindrance to H&S outcomes also (Table 3). This is because negotiation limits the participation of excluded stakeholders. Examples of these include workers, workers' families, manufacturers, subcontractors that are not nominated by clients. The exclusion of such role players may reduce their commitment to H&S and process innovation. The opportunity on the other hand is for clients to be transparent and share the perceived 'costs' and responsibilities of H&S.

Table 2: Merits of LoPS.

Merits	Description
<ul style="list-style-type: none"> • Improved relationship 	LoPS offers prospects of improved relationship between the project team than in traditional procurement (Ogunsanmi, 2015).
<ul style="list-style-type: none"> • Potential of higher quality and value for money • Presents opportunities 	Improved quality of workmanship is likely as resource quality is ascertained (Akinkunmi <i>et al.</i> , 2018). Opportunities for tradesperson to be engaged as subcontractors (Akinkunmi <i>et al.</i> , 2018).
<ul style="list-style-type: none"> • Potential to save time & cost 	Collaboration saves time, including design and construction period (Akinkunmi <i>et al.</i> , 2018). This means projects can be delivered timely (Fagbenle, 2010 and Ogunsanmi, 2015). In addition, clients are able to save cost, including from contractors' overhead (Akinkunmi <i>et al.</i> , 2018 and Ogunsanmi, 2013b).
<ul style="list-style-type: none"> • Satisfactory coordination and control 	Clients have better control of the construction process and can achieve better satisfaction with their involvements than they usually do in traditional procurement (Ogunsanmi, 2015)

Clients' involvement in building processes is both a merit and a characteristic of LoPS. Will and Hawkins (2010:7) put this aptly: while clients are able to use contract procedures to monitor contract provisions against key performance indicators, monitoring from within the project team is more effective. LoPS presents opportunities for clients to ensure the contractors adhere to H&S requirements. They reserve the right to construct this appropriately in their own contract language. They are able to enforce their objectives during tender action, planning and control of value streams, and are able to measure contractors' capabilities and learning cultures against key risks indicators (Wills and Hawkins 2010). A typical example illustrated by Wills and Hawkins (2010) is contractors' plans and financial provisions for falseworks and temporary work such as formwork and scaffolding. They argue that these could receive particular attention during tender evaluation.

In addition, Table 2 suggests clients' propensity to save costs and time in LoPS. Table 3 suggests this must come at a cost. There is 'the need for clients to have a high level of knowledge, experience and supervision skills' (Table 3). Given that LoPS results in improved relationship among the project participants, clients could take advantage of the knowledge and experience of contractors and designers and shift H&S responsibilities to them. H&S laws such as the Construction Design and Management Regulations (2015) in Britain require domestic clients to shift H&S duties to contractors and principal designers. In the same vein, it is incumbent that LoPS clients consider candidates with strong H&S background with demonstrable skills, knowledge and experience only.

Table 3: Demerits of LoPS

Demerits	Description
• Limited opportunities and scope	LoPS is likely to attract indigenous contractors only, mainly small contractors (Akinkunmi <i>et al.</i> 2018; Ogunde 2011).
• High level of client involvement	High level of involvement attracts commensurate time commitment and energy (Akinkunmi <i>et al.</i> 2018). Clients' diplomacy is incumbent also (Hardy 2013).
• Reduced profit for contractors	Contractors' profit is reduced (Ogunsanmi 2013&2015; Ogunde 2011). Incomes from material procurement and logistic are gone.
• Results in contractual disputes	Ogunde (2011) found ambiguous contracts, poor communication, distrust and design and constructability issues in LoPS.
• Negotiated tender is mainly used.	Negotiated tenders offers limited tendering options (Akinkunmi <i>et al.</i> , 2018, Ogunsanmi 2015).
• Biased risk in favour of contractors.	Clients are vulnerable where work is at risk of quality issues (Hardy 2013). Client bears more of the risk (Ogunsanmi 2015).
• High level of knowledge, experience and supervision skills.	Client needs strong knowledge of building construction, experience and supervision skills (Akinkunmi <i>et al.</i> , 2018)
• Implementation issues – coordination of resources	Responsibilities can be unclear, ambiguous and overlapping (Ogunde 2011). Contractors may struggle to harness production resources with own labour resources and may fail to break even due to low overhead and profit (Ogunde 2011).

A major barrier to integrating H&S into LoPS is ambiguity of contracts and the apparent lack of clarity regarding roles and responsibilities of players in LoPS. Wills and Hawkins (2010) identify vague and generalised reference to H&S in construction contracts. They argue in

favour of clear benchmarks and definitions of H&S in contracts. This would reduce or prevent disputes in LoPS (Ogunde 2011). In addition, contractors are constrained by cost and do have reduced profit. They are likely to struggle to break even. As a result, Wills and Hawkins (2010) suggest it is incumbent to include costs of H&S in the bills of quantities. This will remove the burden of H&S cost from contractors, the most naïve excuses of contractors and clients to compromise H&S (Umeokafor 2017).

The structure and characteristics of LoPS highlight a soft tendency for H&S, a propensity to favour the informal sector and a shift from verbal arrangements to standard agreements. In addition, it involves the opportunity to reach out to the informal sector and the need for appropriate regulation. Whilst Annan *et al.* (2015) put the responsibility for regulation to governments, Umeokafor (2017) has proposed complementary alternative in self-regulation.

Integrating H&S into LoPS

Key strategies for integrating H&S into LoPS are suggested alongside the key opportunities and challenges below.

Strategies

- Draw on cost-saving features of H&S and benefit transfer in favour of H&S commitment of contractors and clients. Clients have the right to know that this is to protect their interests.
- Clients and contractors must interact and negotiate as they define and revise H&S responsibilities progressively right from the very early stages of LoPS.
- Clearly incorporate H&S in the invitation to tender stage of LoPS and in contracts. This must be clear on roles and responsibilities of parties and relative key performance indicators for each stakeholder.
- Integrate H&S in the tender evaluation stage with more attention on contractors' design and financial capabilities for construction of falseworks and temporary works such as formwork and scaffolding.
- The client, designers and contractors must develop H&S plan for coordinating and controlling resources, including labour in the early stages of LoPS.

Key opportunities

- High level of client involvement coupled with the goal of saving cost and high level of risk.
- Responsibilities of H&S can also be negotiated, defined and even revised in the project.
- Opportunities for clients to be well-involved in H&S including monitoring H&S during the construction process.
- Platforms for reaching-out to the informal sector where H&S is difficult to address.
- Clients may witness risks in construction process first hand; on the ground of morals, this may improve their attitudes towards H&S.

Key barriers

- Client involvement—unwilling clients, clients that H&S is low or not on their priority list.
- Ambiguity in contracts documents and unclear roles and responsibilities.
- Lack of relevant skills and experience of the client.
- Risk of the inexperienced and incompetent clients 'taking on' H&S roles hence compromising H&S standards.

- Client's quest to save money may result in compromising H&S.
- Lack of adequate H&S laws and regulatory system to drive the agenda.
- The risk of communication issues because of the nature of LoPS.
- Poor knowledge of H&S in terms of the project team, including clients.
- H&S will be overly dependent on client willingness and attitudes hence the need for drivers such as H&S laws that place more H&S responsibility on the client.

Implications for Practice and Research

The implications of the research include the imperativeness of dedicated contract standards for LoPS that make adequate provisions for H&S in construction projects, contextualised for project situation in DCs. While H&S is emerging in DCs, there is need for national and universal H&S policies that make legal provisions for the integration of H&S into procurement systems. As this study is not empirical, a survey can assess the strategies, barriers and opportunities to ascertain their workability and extent respectively. Another study may explore the impact of the characteristics of LoPS on the H&S performance of contractors. Empirical evidence on the relationship between procurement theories and project's actual H&S performance is limited hence needs to be looked at from different perspectives.

Conclusions

The study critically examined LoPS towards identifying the barriers, opportunities and strategies for integrating H&S into the procurement approach. Among the key features of the LoPS that also present opportunities include its cost and time-saving attributes. The system also presents a high level of client involvement in terms of control and monitoring, an opportunity for H&S. However, the level of client's skills and knowledge in construction and H&S and the risk that inexperienced clients or those with no knowledge of H&S may assume H&S responsibilities are challenges. Because of the nature of LoPS, it is likely to attract only private clients and domestic contractors who are known for poor H&S records. Nevertheless, the strategies include drawing on the cost-saving features of H&S and the impact of the risk, to 'sell' the benefits to the client; and negotiating, defining and revising H&S responsibilities in the early stage of LoPS. The implications for DCs include the imperativeness of establishment of standardised contract for LoPS that make adequate provisions for H&S on projects.

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