

INTEGRATING RESPONSIBLE SOURCING IN THE CONSTRUCTION SUPPLY CHAIN

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Certification to industry standards is the most tangible means for a company to prove its commitment to sustainability issues. The construction sector is of particular interest, due to the huge impacts of its operations. Many companies operating within the sector have implemented environmental management systems in line with ISO 14001 although recently the industry has become focused on the concept of responsible sourcing (RS); the ethical management of sustainability issues associated with products and materials in the construction supply chain. An adoption of this concept can be evidenced by certification to BES 6001, the framework standard for responsible sourcing. Despite this, the number of accreditations is relatively low and knowledge and awareness of RS is still limited. This review paper explores the reasons behind the under-emphasis of RS within the industry, despite a continually increasing knowledge of the Corporate Social Responsibility (CSR) agenda. Currently, opinion is divided on whether CSR and RS represent a form of corporate philanthropy or a channel by which revenue can be increased. The issue is further complicated by the presence of engineered-to-order (ETO) products, which creates barriers to the enactment of RS and CSR principles. These are explored and possible explanations for their absence from supply chain management issues offered. Furthermore, the potential to extend the interpretation and application of the ISO 14001 framework to demonstrate the consideration of these principles is presented. Other certification schemes of particular significance to the industry and the problems for companies to achieve certification are also discussed; in particular, access to financial and other resources are identified as a key barrier to certification, especially for SMEs. Recommendations are made for future research that might enable SMEs to achieve sustainability certification more readily and to help the industry embrace the concept of RS more broadly.

Keywords: corporate social responsibility, engineer-to-order, responsible sourcing, supply chain, sustainability certification.

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INTRODUCTION

Construction has a significant impact upon the environment, economy and society, due to the large impacts of its operations and its consumption of vast amount of resources and energy (Czarnecki *et al.* 2010; Dixit *et al.* 2010; Sev, 2009). However, recent studies have indicated that in terms of being sustainability driven, the sector is somewhat lagging behind other sectors (Glass, 2011). In addition to this, the industry has a major impact upon society across the life cycle of its operations (Murray and Dainty, 2009), accounting for around half of all greenhouse gas (GHG) emissions (Greenwood *et al.* 2011). It is clear that, for the sector as a whole, there is scope for improvement and by aiming to work towards international standards, organisations can begin to manage their sustainability performance more effectively and hence observe reduced impacts. There does however, appear to be no clear definition of what constitutes sustainable construction or any consensus regarding sustainability measurement, despite a growing field of new technologies which aim to minimise negative environmental impacts (Wallhagen and Glaumann, 2011). Certification to industry standards is the most tangible means for a company to demonstrate its commitment to sustainability issues. The concept of 'sustainable development' has been increasingly viewed as being at the forefront of business agenda, and global acceptance of this term has resulted in a heavy focus, both from industry and policy makers, to address the issue of depleting resources and climate change. It has frequently become the focus of standardisation (Schwartz and Tilling, 2009) and hence a number of national and international certification bodies now exist, and widespread adoption of the increasing number of published standards has been observed.

This paper presents a literature synthesis which clarifies the current position of the industry, the effectiveness of implementation of sustainability certification and the challenges confronting the sector in moving forward. A number of issues are explored to unravel these challenges; in particular the corporate social responsibility (CSR) agenda is considered in tandem with responsible sourcing (RS), and the effect that engineered-to-order products have upon it. However, RS is neither mandatory nor embraced outside of the UK (Glass, 2012), so the potential flexibility of ISO 14001 (BSI, 2004) standard for environmental management is also examined to determine whether this might offer an alternative route for RS implementation to yield greater adoption of the concept. Sources from academic research, industry and advisory bodies and government agencies are drawn upon to indicate the challenges in obtaining certification, particularly for those companies classed as small and medium sized enterprises (SMEs). The conclusion is that the answers may be found in research which examines the interfaces between current standards, supply chain behaviours and societal expectations on construction.

SUSTAINABILITY AND CSR PRACTICES IN CONSTRUCTION

CSR is key to both international and sustainable development and although there are an increasing number of publications on the subject from a variety of different perspectives, the lack of a commonly accepted definition for CSR is still apparent (Aßlander, 2011). Indeed, given the social, economic and environmental impacts of the construction industry and its significance as an employer through the provision of work, it has been argued that that it is the area where perhaps the greatest level of attention should be devoted (Murray and Dainty, 2009). Many large firms, including those within the construction industry, have begun to compile annual reports on their

sustainability performance (Glass, 2012), but the extent to which these address the three aspects of sustainability however, has been questioned. For example, Lozano and Huisinigh (2011) find that in a sample of reports each aspect of sustainability is being addressed in a compartmentalised way. They argue that a more holistic approach should be adopted and that this should be integrated into corporate decision making. Similarly, Manetti (2011) finds that stakeholders are not engaged effectively in the decision making process of organisations, despite a number of international standards and reporting guidelines prescribing this stakeholder engagement as imperative (e.g. ISO 26000; BSI, 2010). Currently, debates on CSR see it as either a form of corporate philanthropy, or as a revenue opportunity, but much of the argument for CSR centres on morality and legitimacy; businesses should engage with it as it is seen as 'the right thing to do'. Yet Green (2009) states that neither profitability nor economic performance can be linked conclusively to CSR, which begs the question: why do organisations pursue with CSR policies when they do not appear to affect performance in a positive way? A fundamentally similar problem can be identified in the literature around environmental management; Heras-Saizarbitoria *et al.* (2011) find no evidence to suggest that financial performance is linked to EMS certification, but there is sufficient argument to suggest that the widespread uptake of the ISO 14001 (BSI, 2004) standard occurred due to a common belief that it was morally correct to take a proactive approach to environmental issues. However, it is also true that the expectation of customers and employees is that organisations will possess CSR policies. Hence, there is potential value in considering the role of standards (i.e. certification and management system standards), both established and emergent as a novel lens through which CSR in construction can be viewed.

AN INCOMPLETE TRIO OF SUSTAINABILITY STANDARDS

Industrial sectors began to realise the impact of their operations in the early 1990s; the response was the development of a number of environmental assessment tools and certification schemes, such as the International ISO 14001 (BSI, 2004) standard for environmental management. ISO 14001 (BSI, 2004) has, since its inception in 1996, become one of the most widely used certification standards, with close to a quarter of a million certifications globally (Marsden, 2011). Indeed this widespread uptake is indicative of a general consensus among global businesses that an ISO 14001 (BSI, 2004) certification is particularly coveted; the generic nature of its structure renders it applicable to any organisation. ISO 14001 (BSI, 2004) is recognised as a robust standard for proving environmental pro-activity; its core aim is to ensure that the EMS is integrated with business goals, but Curkovic and Sroufe (2011) also note that should an organisation be convicted of an environmental non-compliance, proof that an EMS was in place at the time of the incident can lead to reduced penalties. So, it could be argued that such an approach provides an 'insurance policy' for that organisation, but can it do more?

An environmental management system (EMS) compliant with ISO 14001 (BSI, 2004) makes up one third, along with ISO 9001, the quality management system standard and OHSAS 18001, the occupational health and safety standard, of a trio of sustainability standards that are now widely required, strived for and legitimised in industry. For many years, certification to these three standards was generally viewed as adopting a sustainable approach to business, with the framework provided by EMS implementation seen as taking a proactive attitude to improving environmental performance. Importantly, ISO 14001 (BSI, 2004) does not cover all aspects of sustainability, so in isolation does not completely address sustainability as a concept,

but has potential for extending to consider social issues. The framework enables an organisation to reduce its negative impact on the environment by ensuring compliance with all relevant legislation, minimising pollution risks and committing to continually improve environmental performance (NB: there is considerable overlap between ISO 14001 and section 3.4 of BES 6001 (BRE, 2009) which also covers a number of environmental requirements required ISO 14001 (BSI, 2004), such as emissions of greenhouse gases, use of resources, and waste management among others). However, it is the consideration of social issues which appears to be missing from both ISO 14001 and the other standards in the aforementioned 'trio'. This gap is clear to see; Henriques (2012) explains that, despite its not being a certification or a management system standard, in a bid to demonstrate social responsibility, many companies are claiming compliance with the recently created standard, ISO 26000 (BSI, 2010), even though it is not possible to do so. A recent focus upon ethical and social issues, accentuated by media interest in a number of high profile cases, has certainly caused organisations to be more scrupulous regarding transparency of their operations and traceability of their products and services, particularly for those operating within construction. Although OHSAS 18001 covers some social attributes, there is a notable absence of issues such as fair labour standards and working conditions (outside of ISO 26000), and industry has begun to require that this subject area is addressed. For instance, within responsible sourcing (RS), certification to a framework standard; BES 6001 (BRE, 2009), developed by BRE Global, can prove traceability and transparency in a product supply chain, demonstrate a proactive approach to sustainability and provide a means for a company to enhance its reputation (Robinson *et al.* 2011), as discussed in the next section.

RESPONSIBLE SOURCING: FIVE PROBLEMS

Good corporate citizenship is of significant benefit to an organisation's reputation, which itself will act to increase turnover (Green, 2009). From a supply chain management perspective, engaging in CSR and certification to standards has become particularly important, as demand for supplier traceability information has increased. This is particularly true of the construction sector, where many materials are imported from regions where corruption and poor working conditions and standards are still widespread. Responsible Sourcing (RS) concerns the management of sustainability issues within the supply chain, often considering ethical issues in detail (Glass *et al.* 2011) and has become a recent focus due to the published government target of 25% of all construction products to be sourced from RS schemes by 2012 (HM Government, 2008). Moreover, it is likely however that in future years, increasing numbers of building owners will demand RS certification in order to improve their confidence that their construction materials have been sourced with low ethical or legality risks (Glass, 2012). This can be linked to the CSR debate concerning the 'right thing to do' and given the number of high profile cases exposing large companies for using suppliers employing child labour and poor working practices, it seems rather apparent that adopting the RS framework set out in BES 6001 (BRE, 2009) should alleviate such fears and act as an additional method of risk-mitigation. RS thus appears to hold many benefits for organisations, yet the relatively low uptake of BES 6001 (BRE, 2009) is suggestive of the fact that there are potentially a number of issues with the standard.

First, RS has been somewhat under-emphasised and there has been very little research into RS as a concept; the absence of a focused research agenda has resulted in very little guidance for those operating within the sector and so evidence to suggest that

this relatively uncharted territory has any benefits is scarce. At present, there is a developing body of research focusing explicitly on RS and its reception within the industry. The Action Programme for Responsible Sourcing (APRES) network (see Glass *et al.* 2011) is a research council funded project which aims to develop a knowledge base on RS and create new research ideas that will provide the construction sector with guidance on meeting both government and industry targets.

Secondly, as a result, many industry professionals, although aware of it, are yet to become familiar with the concept. Clearly, there is a real need to develop knowledge and awareness in this subject. Given that the target year has now been reached and widely varying ideas of what RS actually is still remain, it seems unlikely that this target will be met. This is caused by the lack of purchase of RS within the industry, which has led to a poor level of awareness; further exacerbated by the rather sporadic research and education on the subject. Glass *et al.* (2012) report that 94% of respondents to a survey felt that further publicity and awareness raising on RS was required. Awareness of the importance of RS is a prerequisite to adoption of the concept and hence certification to BES 6001 (BRE, 2009). Without this, construction companies are unlikely to engage with a concept that will just appear at the outset to be a rather costly and time-consuming process.

Thirdly, corporate decisions of whether to engage with RS are also influenced to some extent by the perceived risk associated within the supply chain; CSR is seen by many as a risk-mitigation strategy to offset the likelihood of customers boycotting products (Green, 2009). However, companies whose products have a low risk of negative exposure through the supply chain are arguably less likely to engage with the concept than those whose products are sourced from countries where there is a poor record of fair working conditions and corruption, for example. All this is undoubtedly true of a large multi-national corporation, who are often much more focused in the media spotlight than SMEs, which brings us to the fourth problem, that of asymmetry. This works the other way for an SME; the financial and other resources that are required to gain certification may be perceived as taking a large risk, as it is likely that this strain upon staff resources may result in diminished attention being given to other work. Such resource issues are likely to be the main barriers to take up of the standard for SMEs. Results of a recent survey (Glass *et al.* 2012) indicate that in addition to the cost associated with certification to BES 6001 (BRE, 2009), a lack of interest and understanding from clients and customers forms a major barrier to its uptake, creating participation asymmetry.

Finally, there is a problem of going 'beyond philanthropy'. As a moral issue, exploitation of child labour, poor working conditions and corruption are deemed as problems that are important to tackle. However, it is rather alarming that the results of a recent survey (Glass *et al.* 2012) should suggest that moral concern only extends as far as philanthropic values, and does not hold significant influence within the business. Furthermore, it could be argued that at the organisational level, idealised notions of how to enact CSR will be very difficult to realise in practice - for this reason, issues such as RS are commonly relegated to a secondary priority until they are demanded by clients.

THE ISSUE OF ENGINEERED TO ORDER PRODUCTS

A number of problems have been outlined which create barriers to the uptake of RS as a mechanism to enact CSR in construction. However, adoption of RS is further complicated by the presence of engineer-to-order (ETO) products, which are rather

noticeably absent from supply chain management debates, so here we consider ETOs in greater detail. Similarly to RS, there is a great deal of confusion and uncertainty surrounding the definition and strategy for the ETO sector (Gosling and Naim, 2009). The ETO supply chain is typically regarded as one where the decoupling point is located at the design-stage (Gosling and Naim, 2009). It is particularly relevant to this debate, as it tends to be associated with large scale projects in sectors such as construction. It is considered as a complex and time-consuming process due to the number of stages that must be completed after the product design stage, and often there is a necessity to source suppliers to co-develop the product (Amrani *et al.* 2010). Product designers are often under pressure to develop a broad range of design solutions to address customer-specific requirements, and as these variants tend to be individually developed on a project-to-project basis (Brière-Côté *et al.* 2009) they become a complex issue to manage. Finally, the high levels of customisation associated with ETO products leads to increased costs, higher risks and long lead times (Hicks *et al.* 2000) and Cheng *et al.* (2010) indicate the complex nature of construction supply chains and that they are typically made up of a wide range of participants. Indeed, such complexities are identified in Gosling and Naim (2009) as a root cause for the relative lack of research attention to ETO supply chains, when compared with those in the high volume, standardised supply chains, such as that of the make-to-stock (MTS) chain. As customers can specify customised options within ETO product lines, there are potentially a number of different sources that such custom products could be sourced which complicates the application of an RS framework, such as that of BES 6001 (BRE, 2009). It is thus significant that all the products that have been certified under BES 6001 (BRE, 2009) to date are from MTS supply chains; none are from ETOs which again indicates a further problem of asymmetry.

DISCUSSION

Robinson *et al.* (2011) suggest that engaging in sustainable practices is no longer viewed as complementary to a firm's corporate image or activities, but is seen as an increasingly integral part of doing business. Indeed, this supports the premise that CSR provides an increased revenue opportunity for organisations. In addition to this however, it is also true that the wider social good caused by the actions of an organisation can only ever be incidental to the interest in making profit, as companies are legally bound to maximise profits for shareholders. Two major points of departure have emerged thus far, which are set out here in the context of the SME.

First, in the case of SMEs, raising the initial financial resources to gain certification often represent a significant proportion of an SME's turnover and hence becomes rather a significant barrier. As a result, the number of SME certifications to key standards remains very low and those who do so are motivated because they feel pressure to do so from companies higher up the supply chain; they feel that financial benefits will be gained indirectly through maintaining the business links with larger corporations further up the supply chain. Interestingly, both RS and ETO supply chains have been found to be subjects with a great deal of uncertainty and neither has had adequate exposure and research. It is important to determine what creates supply chain buy-in in MTS and ETO scenarios; with regard to RS, an organisation can only be as 'responsible' as its weakest link in the supply chain. This is a particularly difficult trajectory for SMEs operating within the ETO sector; such is the variation of projects that they engage in and therefore variety of constituent materials.

Secondly, an extension of ISO 14001 (BSI, 2004) could render BES 6001 certification more straightforward; compartmentalisation of the aspects of sustainability is an issue that must be addressed and broadening such tools is the most appropriate mechanism to address this. This may be particularly relevant to an SME due to the resource issues they face coupled with reliance on informal procedures, rather than by adoption of a formal management system (Marsden, 2011). This is an example of a more social barrier; accreditation and quasi-accreditation are only part of the issue and may not overcome inertia in this area (e.g. a lack of adoption of such standards will not be completely resolved by making certification a more cost-effective process). Glass (2012) notes some fundamental problems with broadening the application of such tools to consider a more holistic approach, nevertheless, further research should be conducted to explore such opportunities (particularly given the informal adoption of ISO 26000 in practice).

CONCLUSION

Although the corporate social responsibility (CSR) agenda has been adopted in construction, the adoption of the RS framework standard BES 6001 has been very low, particularly among small and medium sized firms (SMEs), despite there being strong links between CSR and RS. Responsible sourcing is a particularly marginalised issue within the wider CSR agenda; it is yet to be embraced as a concept, thus it becomes a particularly interesting and important research topic. If improving image is becoming integral to the way in which business operates, then there is a particularly strong case to be had in engaging with the supply chain and integrating RS into common CSR practices.

Engineer-to-order (ETO) products have been presented as being of particular relevance to this debate, particularly as the construction industry tends to deal with a high proportion of ETO products. None of the BES 6001 (BRE, 2009) certified products fall into the ETO category, further accentuating the need for research, particularly given that the construction industry is becoming increasingly focused upon ETOs.

SMEs struggle to gain certification to standards and overall, there appears to be a reluctance of the construction industry to embrace and enact CSR for anything other than commercial reasons. This makes it problematic for standards such as BES 6001 (BRE, 2009) to have any real purchase within the industry. This, coupled with its apparent marginalisation has resulted in a poor rate of uptake.

Most fundamentally perhaps however, is to improve the current level of awareness of RS as this can almost be considered a prerequisite for adoption of RS as a concept. Extending the ISO 14001 (BSI, 2004) framework may be a solution to this, particularly for SMEs, as 'combining' these standards may enable easier certification for SMEs and may render certification more attractive.

We maintain that a new research nexus can be developed at the interface of current sustainability standards, emergent supply chain (moral) behaviours and broader, societal expectations on construction; this could lead to fascinating new insights for CSR and supply chain scholars.

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