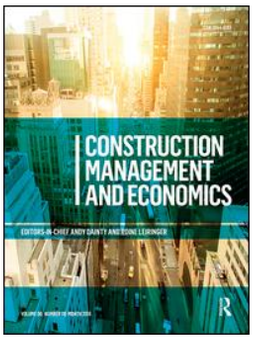

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Mapping corporate social responsibility strategies in the construction and engineering industry

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ABSTRACT

Interest in corporate social responsibility (CSR) is growing in response to societal and regulatory demands that construction businesses contribute positively to the environments and communities in which they build. While, CSR research in the construction and engineering industry is progressing there has been little research into whether and how firms in this industry operationalize CSR, how they incorporate CSR into their business vision, leadership and mission and strategies and what forms these strategies take. In addressing these gaps in knowledge, a survey of 104 firms from across the construction and engineering industry and its supply chain in Australia and New Zealand was undertaken. The results indicate that CSR in construction and engineering firms is largely informal, unsophisticated, compliance driven and in its early stages of development. There is little strategic focus in CSR initiatives and the potential social capital derived from better strategic relationships with communities appears to be largely wasted. Conceptually, it is concluded that there is a need to adapt current models of CSR practice, developed in a permanent business context, to reflect the transitional, nomadic and project-based nature of construction. Current models of CSR are inadequate at explaining how firms operating in the construction industry need to practically adjust and adapt their CSR strategies to fit with the constantly changing political, social, cultural, environmental and economic profiles of local communities and the requirements of clients and local governments.

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Corporate social responsibility; strategy; shared value; sustainability; Australia; New Zealand

Introduction

Bowen (1953) is often credited with laying the foundations of corporate social responsibility (CSR) when he provided the seminal definition of business social responsibility as being the obligations of managers to pursue policies, make decisions and follow actions that are in line with the objectives and values of society. Since then many other definitions of CSR have been produced by academics, governments and non-government organizations such as the widely cited definition of the World Business Council for Sustainable Development which defined CSR as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large" (Watts and Holme 2003, p. 3).

Despite the long-standing interest in CSR across a range of sectors, according to Aguinis and Glavas (2012, p. 959) it is only recently that academic interest in CSR has started "accelerating rapidly". For example, Frynas and Stephens (2015) recently showed that almost half (43%) of all CSR articles globally having been published since 2005. Ghobadian *et al.*'s (2016) review of CSR research over the last 60 years argues that this recent acceleration in interest has been driven by three major changes in the business environment: increasing connectivity and information availability about businesses impacts on the community and environment due to the rise of the internet and other communication technologies; increasing disparities between government budgets and corporate power to address welfare and environmental challenges; and rising public concerns about issues such as climate change, sustainability and inequity in society. Ghobadian *et al*. (2016) show that the concept of CSR has developed significantly since Bowen's (1953) first conceptualization to encompass numerous-related concepts such as corporate responsibility (Waddock 2004), sustainability (Zadek 2004), corporate citizenship (2005), global business citizenship (Wood *et al*. 2006) and more recently social entrepreneurship and new public governance (Arend 2013, Barraket *et al*. 2016). However, according to Visser (2006), the most well-known and influential model of CSR remains Carroll's (1991) four level "pyramid of corporate social responsibility" which conceptualizes firms as having economic, legal, ethical

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and discretionary responsibilities to society. Economic responsibilities included the production of goods and services of value to society, legal responsibilities covered abeyance of laws and regulations, ethical responsibilities represented adherence to principles of justice and fairness and discretionary responsibilities were a firm's voluntary and philanthropic efforts go beyond the minimum expected by society. As Carroll (2016) recently pointed out, tensions and trade-offs inevitably arise as companies seek to perform in all of these areas. The way that a firm does this then defines its CSR orientation and reputation, although recent research suggests that in reality there is generally a low awareness of individual company CSR initiatives in the community and that people tend to make sweeping generalizations about a business's CSR record based on anecdote and newsworthy events that appear in the media (Dolnicar and Pomering 2007). In the construction sector, Loosemore and Phua (2011) reached a similar conclusion based on case studies of some of the world's most well respected consulting and construction companies, claiming that most clients care little about the detailed CSR strategies of firms in their construction supply chain, seeing little, if any, link with their building project outcomes. The users of buildings are even less concerned, having generally no idea of which company designed or built the buildings they occupy or of their CSR record. As CIOB (2015, p. 4) notes, "The dark side – the systematic exploitation of millions of vulnerable migrants – is rarely acknowledged, even by the clients and multinationals that commission and create our shiny new cities".

Carroll's (1991) conceptual framework remains one of the most widely cited model in the field of business (Lee 2008). However, in recent reflections on the use of the model (Carroll 2016) acknowledge that there were some important limitations. For example, Carroll (2016) acknowledged that the model was largely based on western style capitalistic societies and may therefore need adjusting to meet the conditions of less developed countries. This is supported by Visser (2008) who found that CSR in developing countries tends to be less formalized and institutionalized than in developed countries and when practiced, it is usually by large, high profile national and multinational companies. Furthermore, in developing countries, CSR generally takes the forms of charity to causes which are often very different from developed countries, such as tackling HIV/AIDS and poverty. Furthermore, the spirit and practice of CSR are often strongly resonant with traditional communitarian values and religious concepts. Another limitation of Carroll's (1991) framework is that it was based on large companies and needs adapting to smaller businesses such as those which dominate industries like construction. For example, Sen's (2011) research into the CSR practices of small-to-medium-sized enterprises (SMEs) in Australia found that they were mostly ad hoc, unstructured, informal and non-strategic and strongly influenced by their local community needs and the firm's own internal moral values. The CSR activities of SMEs avoid charity due to their resource-poorness and also tend to focus more on discretionary stakeholders with lower salience and employees and not with their customers. Finally, Carroll's (1991) model was based on research into permanent business organizations, whereas construction operates in a project-based environment where the social, environmental and economic challenges and requirements change from project-to-project depending on client priorities and community structures. As Loosemore and Higgon (2015: preface) note, "Construction projects come and go but communities stay". These important differences are perhaps the reason why the conceptualization and definition of CSR remains an unresolved issue in construction CSR research. According to Lou *et al*. (2011) and Watts *et al*. (2015), conceptual and definitional vagueness of CSR still plagues the field and a review of construction management CSR research shows that despite growing interest in the subject, research which could be legitimately classified as CSR remains largely uncategorized and highly fragmented covering a wide diversity of issues. These include: community engagement (Teo 2008); corporate ethics (Sommerville 2011); minority businesses (Haupt and Fester 2012); responsible sourcing (Glass *et al*. 2012); environment and sustainability (Boyd and Schweber 2012, Sage *et al*. 2014); human resource management (Lingard *et al*. 2010, Dainty and Loosemore 2012); discriminatory labour practices, equality and human rights (Dunn *et al*. 2011, McCarthy *et al*. 2013, Galea *et al*. 2015); corruption (Bowen *et al*. 2012); fair business practices (Raidén and Sempik 2013); and more recently social enterprise and procurement (Loosemore and Higgon 2015). There has also been a limited philosophical debate around CSR motives. For example, Green (2009) argued that CSR initiatives are driven by an enterprise's culture and are still primarily judged from a business case, rather than from the perspective of the beneficiaries it is meant to serve. In other words, CSR is only viable if there is a business case to be made. This has been supported by Ness (2010) and by Loosemore and Phua's (2011) analyses of CSR in the Australian construction industry. More recently, Sherratt (2015) questioned the intervention of governments and firms in the health of the worker outside the workplace, arguing that this undermines personal freedoms and individual rights and autonomy. In other recent studies, Watts *et al*. (2015) and Singh *et al*. (2015) suggest that the concept of CSR in construction varies from firm-to-firm, is often misaligned with client definitions which tend to be linked to local needs and is evolving to encompass a more integrated sustainability focus. Most recently, drawing on

the theoretical classifications of Garriga and Melé (2004), Loosemore and Lim (2017) argued that CSR initiatives in the construction sector are integrative, isolated, narrowly focussed (mainly on environmental activities), immature, compliance-based and operational rather than strategic. Ironically, while Green (2009) and Ness's (2010) work points to the importance of a business case in justifying CSR investments in construction, according to Loosemore and Lim (2017) the link between CSR and business performance increasingly espoused (and assumed) in much of the CSR literature does not appear to be accepted in practice in the construction industry.

While, it is positive that there is growing and varied interest in CSR research in the construction industry, the heterogeneity of research in this area means that we have little idea of how firms construct and operationalize CSR in practice, how firms incorporate CSR into their business strategies and what forms these strategies take. The aim of this paper is to answer these three unresolved but fundamental research questions, recognizing the plurality of the industry and its clients and the immense variety of community contexts in which it builds. Clearly, given the above discussion, there is no "one way" in which the construction industry operationalizes CSR. However, given the heterogeneity of current CSR research in construction, mapping and understanding the types of CSR strategies used by firms in the industry is important in moving CSR research in the construction sector forward. As Carroll and Shabana (2010, p. 89) state, one important way to start CSR in any field is "to identify the different categories of CSR and sort out companies' activities in terms of different types, classes or kinds of CSR". While, it is important to recognize that it is not appropriate for all organizations to manage CSR the same way, Smith (2011, p. 9) argues that "consensus on the core concepts is vital so that CSR can be implemented commonly among global corporations".

Categorizing CSR theory and strategy

The diversity and fragmentation of CSR research found in the field of construction is not unique. Organizing such a diverse field of research has been a preoccupation of many scholars across many other industries and despite attempts to categorize and organize the theoretical foundations of CSR research, the field also remains highly fragmented outside of construction and engineering. For example, Aguinis and Glavas's (2012, p. 959) analysis of recent 588 journal articles and 102 books and book chapters in the CSR field labelled it as "vast and heterogeneous" revealing important knowledge gaps related to the adoption of different theoretical orientations by researchers studying CSR at many different levels of analysis. Similarly, Frynas and Stephens (2014) concluded that there is currently no consensual definition of CSR and one "most appropriate" classification of CSR theories for researchers to use in their work. More recently, in mapping CSR research over the last sixty years, Ghobadian *et al*. (2015) show that both academically and practically, CSR has become a widely used term to describe a large variety of issues, for a wide variety of stakeholders, relating to a desire to rethink traditional ways of doing business. More generally, review shows that both business and researchers have moved away from an explicitly normative and ethics orientation to an implicitly normative and performance-orientated approach which focuses on the benefits of CSR through relational, reputational, productivity, behavioural, psychological, group and identity mechanisms. It is interesting to note that the construction industry appears to be following a similar route in adopting an "integrative" approach to CSR which recognizes the mutuality of interests between business and society (Loosemore and Lim 2017). On the other hand, construction researchers appear to be adopting a more "ethical" approach moving in the opposite direction, putting the community and employees at the centre of the debate and rejecting the business case as an unethical and cynical attempt to manipulate communities and employees to suit business ends (Garriga and Melé 2004, Green 2009, Ness 2010, Sherratt 2015).

Despite the lack of consensus in theory development, there have been attempts to categorize the types of CSR activities which firms use to build their CSR strategies. However, all of these have been outside the construction sector. For example, the International Standards Organization (ISO) has produced arguably the most widely used and recognized categorization of CSR activities in its voluntary international standard for social responsibility (ISO 26000). While, criticized for treating public and private sector organizations the same (Smith 2011), the value of this framework is that it was developed across multiple stakeholder groups (private firms, public organizations, NGOs, academic researchers etc.) to create seven core CSR categories which form part of most current CSR definitions. Kritkausky and Schmidt (2011) describe the types of activities which are typically included in these categories. The first CSR category is "organizational governance" which involves activities such as: accountability and transparency in decision-making; respecting laws; responsible use of financial, natural and human resources; considering all key stakeholders in decision-making including minority groups; monitoring and reporting of business' activities, both positive or negative. The second CSR category is "human rights" which includes: establishing fair mechanisms for promoting human rights; equity and diversity policies; responsible sourcing and supply chain management; respecting individuals' rights to freedom of association, opinion and expression; and respecting

economic, social and cultural rights. The third CSR category is "labor practices" which involves any activities that: provide a just, safe and healthy work environment for employees which involves: good wages and working conditions such as pensions, holidays, work–life balance, sick pay and social protection; support dialogue between employers and employees; and provide opportunities for human resource development. The fourth CSR category is "environment" which includes activities such as pollution prevention; emissions reduction; use of sustainable renewable resources; life-cycle management; using environmentally sound technologies and practices; and sustainable procurement. The fifth category is fair operating practices which include respecting the law; practicing accountability and fairness in business relationships; social procurement; and responsible sourcing. The sixth category "consumer issues" includes: providing healthy and safe products, giving accurate information, and promoting sustainable consumption, designing products which can be reused, repaired or recycled; reducing packaging waste; and protecting consumer privacy when handling personal data. The seventh category "community involvement and development" involves activities such as community engagement; supporting locals charities and causes; being a good neighbour and; providing opportunities for community members through local purchasing and employment.

Recognizing that CSR is context dependent (politically, economically, culturally and by industry sector), Ashridge (2005) produced a framework which categorized the most common form of CSR activities across a number of countries and industries into seven main groups: *leadership,* vision and value; *stakeholder engagement*; *community activities; environmental activities; supply chain activities; workforce activities* and; *marketplace activities*. *Leadership, vision and value activities* relate to those activities that put CSR at the centre of the enterprises, direction, purpose and mission. These include activities such as developing CSR policies, codes of conduct, integrating CSR into business strategy and corporate governance and management systems, training and development etc. *Market place activities* include those activities that relate to the firm's marketplace responsibilities and its customers. These include activities such as responsible and cause-related marketing and advertising, providing good and clear product information, promoting diversity in the customer base etc. *Workforce activities* include those activities that relate to the fair treatment of employees. These activities include responsible and fair remuneration, safe and fair conditions of employment, work–life balance and health and well-being etc. *Supply chain activities* include those activities that encourage responsible practice through a firm's supply chain. These types of activities include supplier codes of conduct, fair pricing and treatment of supply chain partners, responsible sourcing etc. *Stakeholder engagement activities* are activities associated with those activities that stakeholders think it should be doing to be socially responsible. These activities include stakeholder analysis, mapping stakeholder concerns, engagement and consultation protocols, stakeholder surveys, complaints procedures etc. *Community activities* are those that are associated with promoting the health and well-being of local communities in which the enterprise operates. These activities include supporting local causes, charity support, engaging in partnerships for social investment, philanthropic activities, sponsoring, volunteering etc. Finally, *environmental activities* are those that involve mitigating environmental impacts of the firm's activities. They include running environmental awareness campaigns, using green technologies, improving energy efficiency etc.

More recently, Battaglia *et al*. (2014) categorized CSR initiatives among small-to-medium-sized enterprises in the Italian fashion industry into four categories: *Environmental; Workplace*; *Community*; and *Marketplace*. Environment-related activities include actions to mitigate its negative business impacts on the environment, such as energy efficiency measures, a reduction in pollutants, water-saving initiatives and a reduction in dangerous waste production. Workplace activities include actions around treatment of employees including workforce diversity, pay and working conditions, health and safety and human rights; community activities include actions relating to the relationship between a company and the communities affected by its operations. Finally, marketplace activities include actions around relationships with the supply-chain which includes responsible advertising and marketing, dealing with customer complaints, ethical commercial practices and imposing social and environmental requirements on suppliers.

The extent to which the above categorization frameworks, developed in a permanent business environment, apply to industries like construction which undertake their work through nomadic temporary project-based organizations which move from one community to the next is unclear. For example, Close and Loosemore (2014) found that the community was largely seen as a risk by the construction industry. Challenging simplistic assumptions about CSR, Watts *et al*. (2015) sense-making approach revealed important differences in the understanding of CSR between construction project constituencies and concluded that what counts as CSR in one geographical location for one client, may not count for another. More recent research has also shown how emerging social procurement policies, targeted at construction, are requiring construction firms industry to adopt specific CSR strategies if they are tendering for government work (and increasingly private sector work) (Burke and King 2016, Loosemore 2016). Despite these findings, there has been

Table 1. Sample characteristics.

Description	Frequency (*n*)	Percentage (%)
Company size		
Small (1–19 employees)	37	35.58
Medium (20–199 employees)	56	53.85
Large (200+ employees)	11	10.58
Firm ownership		
Privately held	91	87.5
Publicly held	13	12.5
Turnover		
<$1 million	14	13.46
$1–10 million	37	35.58
$10–$50 million	39	37.5
>$50 million	14	13.47
Company location		
Australia	91	87.5
NZ	13	12.5

no equivalent research into the types of CSR activities which firms in the construction industry and its supply chain use to build their CSR strategies. These firms are conspicuous by their absence from the samples used to construct the above classifications. So we have little idea of how firms in the construction industry operationalize CSR in practice, how they incorporate CSR into their business strategies and what forms these strategies take.

Method

To address the significant gap in knowledge described above, an online survey was conducted to explore the CSR strategies of firms across the construction supply chain in Australia and New Zealand. An online survey was used to collect data in this research for three main reasons. First, given that we were enquiring about their firm's CSR record, an online survey afforded a certain degree of anonymity to our respondents, minimizing social desirability bias in our results. Social desirability bias is a potential risk in construction industry CSR research because respondents would want their firms to be seen to be "doing the right thing" – a common but largely meaningless slogan in CSR practice (Loosemore and Phua 2011). Second, this approach to data collection suited the busy lives of our target respondents who were senior professionals in leadership positions in those targeted organizations. Third, face-to-face interviews would have been prohibitively time consuming given the geographic spread and size of our population (firms across Australia and New Zealand). Finally, while electronic surveys are sometimes criticised for being subject to self-selection bias Couper (2000) shows that self-selection is no more problematic in online surveys than in mail and telephone surveys and Gosling *et al*'s (2004) research into samples produced using this method of data collection showed that they are equally representative as samples produced by other survey distribution methods.

The survey comprised several sections. The first section required respondents to provide general information about the nature, size, location, turnover of their company and the international reach of their organizational activities. Subsequent sections asked about the nature and extent of their firm's CSR strategy and activities using the categories produced by Ashridge (2005), ISO (26000) and Battaglia *et al*. (2014). Battaglia *et al*.'s (2014) framework, although derived from the fashion industry is useful because of its relevance to SMEs found in high numbers in the construction and engineering sector. Sen's (2011) work also suggests that there are commonalities between SMEs in all sectors meaning this framework is transferable. Ashridge's (2005) and ISO (26000) frameworks are relevant in their applicability across a range of sector and countries, company sizes and stakeholder groups. Taken together, the three frameworks represent a reliable and rigorously researched basis on which to frame questions around types of CSR activities (Tables 2–7). The last two sections of the online survey related to obstacles our respondents had encountered in implementing these strategies and activities in practice and on perceived links with business performance (Table 8). Responses were given on a seven-point Likert Scale, with commonly used and defined scale point descriptors, ranging from 1 (Never/very ineffective/very low) to 7 (Always/very effective/very high). As suggested by Braunsberger and Gates (2009), Likert scales that contain commonly used and defined scale point descriptors are critical for the computation of the means and standard deviations of items under investigation.

In this research, the questionnaire was pilot tested and validated by nine respondents from the construction supply chain population, who were outside our sample frame. Those pilot testers were sustainability managers, project managers, operations managers and general managers of their respective company. Most of the pilot testers commented that the survey questionnaire was too lengthy and that some questions were not clear. However, they generally perceived that the questionnaire was comprehensive and the questions were relevant. Necessary amendments were made to the questionnaire before an industry-wide survey was conducted.

For the survey, systematic probability sampling was employed whereby 2000 prospective respondent companies were randomly selected from a sampling frame generated from Building Construction Information Australia (BCI)'s database of contractors, consultants, subcontractors and suppliers (For further information about BCI see http://www.bciaustralia.com/). Preliminary research into the data base showed that it provided a good as cross-sectional

sample of the wider construction industry population, providing reliable insights into the nature of CSR activities in the industry. BCI, as the research partner, then emailed each randomly selected respondent company from their membership data base on behalf of the research team, an invitation to participate in the research, an ethics statement to explain their rights and to assure anonymity, an explanation of the research, why the respondent had been chosen, the benefits for them and broader society and a survey web-link to the final anonymous online survey hosted on our University's website. Also, as many companies in the construction industry do not have formal CSR positions, we adopted the "key informant approach" in this study where each firm in our sample was asked to self-nominate a person who they saw as having responsibility for CSR. Out of 825 respondents who confirmed receipt of the invitation by opening the survey link, a total of 104 completed surveys were returned (a response rate of 12%). Table 1 summarizes the final sample structure used for analysis.

Prior to analysis, the data were examined for normality using histograms, skewness, kurtosis and Kolmogorov–Smirnov (K–S) Tests. The test results reveal that the data did not fulfil the normal distribution assumption, with the skewness and kurtosis values ranging from −4.564 to 1.088 and −1.079 to 28.011, respectively. Furthermore, the K–S test results show that the data were statistically significant at $p = 0.000$. It follows that non-parametric tests were adopted in this study.

First the Relative Prevalence Indexing (RPI) method was adopted to facilitate the relative comparisons of items within respective CSR initiative and to provide further insights about the CSR initiatives in construction. The RPI method was chosen over the arithmetic average method because the former is able to derive relative indices within the range of 0–1 for each item and therefore enable researchers to undertake relative comparisons of items. This is an outcome that could be not achieved by directly comparing the arithmetic average of each items considering that items could have different maximum mean values (Holt 1997). Equation (1) below shows the formula for calculating the RPI of each item.

$$\text{Relative Prevalence Index (RPI)} = \frac{\sum_{i=1}^{n}(i \times \text{Frequency}_i}{\text{Total number of samples} \times \text{Maximum rating}}, \quad (1)$$

where i and n represent a respondent's choice along the lowest (1) and the highest (7) points in the seven-point Likert scale, respectively. "Frequency" is the number of respondents who provided the respective ratings; and the "maximum rating" is the highest point that could be given by the respondents, i.e. 7. In this study, a higher RPI indicates that an item is more prevalent than other items with relatively lower RPIs. Furthermore, by working out the RPIs, it allows the researchers to compute the average RPI of CSR initiatives and hence help provide an indicative trend about the CSR implementation in construction.

Lastly, the rank-based non-parametric tests, i.e. Kruskal–Wallis H (KH) and Mann–Whitney (MU) tests, were conducted to determine if there were significant differences between groups of companies on those items within respective CSR initiatives showed in Table 1. These companies were classified under small, medium and large size companies based on the Australian Bureau of Statistics' (ABS) guidelines of <20 employees, 20–199 employees and >200 employees, respectively. Generally, the KH and MU are non-parametric alternatives to the one-way ANOVA and independent *t*-tests, respectively. For the KH test, as more than two groups were studied, a post hoc test (i.e. a multiple pairwise comparison test) was performed to ascertain which of specific groups differed so as to provide further insights about variation of CSR implementation.

Results and discussions

Before discussing the results it is important to reiterate that what is being reported are respondent views on their company's practices and, while strategies have been employed to minimize bias, that they should be interpreted in this context. We also made no attempt to link respondent perceptions to what was formally reported by their employers. While, this might be an interesting avenue of future research, the anonymity of our survey prevented this and it is also likely that many small-to-medium-sized firms in our sample are unlikely to reliably report their CSR activities (Glass 2012). An alternative research design would therefore be required to do this reliably. To this end, Table 2 shows the results relating to leadership, vision and mission. These provide a number of interesting findings: a large number of companies (43.3%) did not have CSR incorporated into their strategy, mission or values; the majority (58.7%) had no stated commitment to CSR or do not know; most (55.8%) did not have a formally documented CSR policy or strategy and; 86.5% did not formally measure or report their CSR performance or don't know whether they do. There were also very few firms (9.6%) which independently evaluated their reports or used any standard internationally recognized methods of measurement and reporting to do so (5.8%). This provides empirical evidence to support Glass's (2012) research which suggested that CSR is largely informal at the moment and in its early stages of development in the construction and engineering industry.

Table 3 shows that the focus of our respondents' CSR policies were mainly on occupational health and safety, environmental and discrimination and diversity issues

Table 2. Leadership, vision and mission.

Description	Frequency (*n*)	Percentage (%)
CSR incorporation into business' strategy, value and mission		
Yes	59	56.7
No	45	43.3
Stated commitment to CSR		
Yes	43	41.3
No	48	46.2
Don't know	13	12.5
Former documentation of CSR policy or strategy		
Yes	32	30.8
No	58	55.8
Don't know	14	13.5
Senior manager's support and promotion of CSR		
Yes	65	62.5
No	23	22.1
Don't know	16	15.4
Having a dedicated CSR manager		
Yes	9	8.65
No	88	84.62
Don't know	7	6.73
Having a formal measure and report CSR performance		
Yes	14	13.5
No	77	74.0
Don't know	13	12.5
Using CSR guidelines to measure and report CSR performance (e.g. AA1000, SA8000,GRI, and Social Index)		
Yes	6	5.8
No	80	76.9
Don't know	18	17.3
Getting independent external validation/auditing of CSR reporting		
Yes	10	9.6
No	79	76.0
Don't know	15	14.4

(although it is notable that the disabled and aged fare poorly in this area of CSR policy). This supports the recent work of Ormerod and Newton (2013) and Gibb *et al*. (2013) of the need for better awareness raising by industry of the support structures and range and scope of opportunities available for disabled and older people in the sector. These results are also a reflection of the current regulatory imperatives which drive the suggestion that CSR in construction is operating at the base of the CSR pyramid and is in an immature state since it is largely "compliance-driven" rather than "discretionary" in focus.

Table 4 results relating to CSR workplace initiatives and activities show that most companies' priorities are to ensure that their employees are treated with fairness and equity in work (item 4c; RPI = 0.90), that their privacy is respected (item 4d; RPI = 0.88) and that they are given ample opportunities to develop their knowledge, skills and careers (item 4e; RPI = 0.87). Apart from these, it is interesting to note that companies are increasingly becoming aware of the mental health and well-being of their workforce (item 4h; RPI = 0.79) and addressing work–life balance issues (item 4g; RPI = 0.78). These findings are encouraging and suggest that long-standing concerns about work–life balance in the construction sector highlighted by authors such as Caven and Raiden (2010) and Lingard *et al*. (2012) are being addressed. As evidenced in Table 4a, most companies did not implement company-wide programmes for: health and counselling (items 4l and 4m both with RPIs = 0.55), wellness and stress prevention (item 4s; RPI = 0.40) child care (item 4r; RPI = 0.32) and aged care (item 4q; RPI = 0.33) assistance.

Table 5 supply chain initiatives and activities results show that most companies' top priority is to treat their product and service providers fairly and with respect (item 5b; RPI = 0.86), listening and working collaboratively with them to resolve issues (item 5a; RPI = 0.82), and working with them to implement standards of acceptable social and environmental performance (item 5c; RPI = 0.73). Furthermore, preference for local businesses was common (item 5h; RPI = 0.72), with efforts to integrate CSR criteria in the selection process of their product and service providers (item 5d; RPI = 0.64), and working collaboratively with their customers to make their products and services more socially responsible (item 5l; RPI = 0.64). The results also show a reluctance: to make specific reference to their CSR record during marketing (item 5j; RPI = 0.52); to set and measure CSR standards against their product and service providers (item 5e; RPI = 0.51) to turn away product and service providers (item 5i; RPI = 0.54) and clients (item 5m; RPI = 0.48) with bad CSR records; to prioritize CSR performance over price given by product and service providers (item 5f; RPI = 0.47); and to screen their customers for CSR record (item 5K; RPI = 0.43). These findings are interesting since they indicate that there is a strong reluctance to engage in supply (and demand) chain reform by refusing to work with firms with a poor CSR record despite the CSR intentions stated above. While, there has been little, if any, research into demand chain management in the construction and engineering sector, from a supply chain perspective, these results support recent research by Loosemore and Higgon (2015) which found that engaging socially responsible firms like social enterprises for example, can be perceived to reduce competitive advantage and that there are significant barriers to entry into supply chains for such firms, despite them being one of the main mechanisms by which construction firms can meet CSR objectives. These results also support other research which has found a general reluctance to engage with responsible sourcing philosophies in the construction industry (Upstill-Goddard *et al*. 2012). Although it must be recognized that

Table 3. CSR strategy focus.

Item code	Description	Frequency							RPI
		Never (1)	Rarely (2)	Quite rarely (3)	Sometimes (4)	Quite often (5)	Usually (6)	Always (7)	
3a	Occupational health, welfare and safety	1	0	0	0	6	11	85	0.96
3b	Environmental management/ impacts	2	2	2	14	9	23	52	0.85
3c	Social responsibility/impacts	3	2	5	11	22	25	35	0.79
3d	Community interactions	2	6	8	21	17	24	26	0.73
3e	Gender equity and diversity	6	3	6	14	12	26	36	0.76
3f	Racism/cultural diversity and equity	4	5	3	15	11	18	48	0.80
3g	Disabled	6	5	11	28	9	20	24	0.68
3h	Aged	8	9	9	21	12	21	23	0.67
3i	Harassment and bullying	3	5	1	9	11	18	56	0.84
3j	Discrimination and unfair treatment	5	3	4	10	11	17	53	0.81
3k	Corruption	6	3	5	10	10	14	55	0.81
3l	Ethical business practices/ code of conduct	2	2	3	5	12	22	57	0.87
3m	Political contributions	49	14	11	14	4	3	9	0.37

the position of a firm in the supply chain influences its ability to reform its own supply chain (those at the top have greater capacity than those at the bottom), these findings indicate that supply and demand chain management is an area which needs further research if the construction and engineering industry is going to improve its CSR performance in the future.

Tables 6a and 6b show the results relating to respondent companies' community engagement focus, initiatives and activities. We found that companies' relationships with local communities were considered to be moderately good (with mean ranging from 4.30 to 4.40) and that their main focus was on clients (RPI = 0.87), local councils (RPI = 0.74) and trade associations (RPI = 0.71). This suggests that CSR in construction in mainly market-driven rather than community driven. This does not support Sen's (2011) research into SMEs outside the construction and engineering sector which found that local communities play a major role in the CSR strategies of most small companies. These results also do not support Watt's *et al.*'s (2015) findings that firms tend to adapt their CSR to the local context of their construction projects, even though this is increasingly a requirement on public projects through emerging social procurement legislation (Loosemore 2016).

Paradoxically we found that although there was a focus on local communities, 66% of the community initiatives adopted by our respondent companies were not claimed to be aligned with a local cause (See Table 6c), with internal staff tending to decide what cause the business should support. Many of these causes and volunteering activities (which were the most common form of self-nominated response) had no specific community focus were focussed away from individual projects and in the wider community, with little strategic link to business objectives. It is also interesting that the majority (40%) of causes supported were in the 1–5 year band with only 10% of respondents being aligned with causes for more than 20 years. The picture which emerges from this research is that CSR in construction is very much short-term and market-driven – a reflection perhaps of the commercial and project-based nature of construction and transient nature of communities associated with project-based industries.

Further into their CSR community engagement initiatives, Table 6d shows that apart from moderately donating cash (item 6r; RPI = 0.62) and assets (item 6r; RPI = 0.54) to community or charity organizations and sponsoring to events, arts or sports (item 6l; RPI = 0.52), there is a reluctance by our respondent companies: to volunteer and match-fund employee donations (item 6m; RPI = 0.45); form partnership with charity or community organizations (item 6n; RPI = 0.41); loan facilities and assets to communities (item 6o; RPI = 0.32); help promoting social cohesion (item 6p; RPI – 0.30); and provide loans below commercial interest rates for community initiatives (item 6q; RPI = 0.21). This indicates that CSR in construction is what Porter and Kramer (2011) would describe as "old school" CSR which largely involves giveaways and donations to local causes and those selected internally by staff. Porter and Kramer (2011) argue that contemporary CSR should be more strategically focussed around "shared value" opportunities with the local communities in which the firm does business.

Table 7 shows the results relating to respondent companies' environmental initiatives and activities. It can be seen that most companies demonstrated strong commitment to effective waste management (items 7i and 7k; with RPIs = 0.80) and energy conservation practices on their construction projects (item 7b; RPI = 0.80). Once again, this is s reflection of regulatory and client imperatives in the construction sector around the increasing

Table 4. CSR workplace initiatives and activities.

Item code	Description	Frequency count							RPI
		Never (1)	Rarely (2)	Quite rarely (3)	Some-times (4)	Quite often (5)	Usually (6)	Always (7)	
Our company									
4a	Consults employees about key business activities	2	6	3	5	25	46	17	0.77
4b	Respects rights to free assembly and collective bargaining	3	9	9	21	14	37	10	0.68
4c	Ensures people are treated fairly at work regard-less of race, gender and disability	0	2	0	4	6	41	51	0.90
4d	Respects people's privacy	0	1	0	3	12	48	40	0.88
4e	Provides ample opportunities for people to develop their knowledge and skills	0	2	1	4	14	44	40	0.87
4f	Is aware of and attuned to the needs of different societal groups in its workforce	2	4	1	15	19	43	21	0.79
4g	Helps employees to balance their work–life responsibilities	0	7	2	11	22	38	23	0.78
4h	Looks after the mental health and well-being of our workforce	0	5	4	12	21	36	25	0.79
4i	Allows employees to volunteer in the commu-nity	7	5	5	25	9	21	31	0.72
4j	Implements mentoring and coaching schemes to support employees	7	9	6	29	15	22	16	0.65
4k	Implements flexible work arrangements for employees	1	6	8	22	21	26	20	0.72
4 l	Implements company-wide health programmes	15	16	16	22	7	18	11	0.55
4m	Implements employee counselling services	15	16	15	22	9	20	8	0.55
4n	Invests in staff training and development	2	2	2	22	22	22	32	0.78
4o	Monitors and encourages employees to take annual leave	5	2	6	18	20	26	27	0.75
4p	Offers promotion opportunities to advance employees' careers	4	2	10	21	18	31	18	0.72
4q	Offers aged care assistance to employees	43	22	16	16	3	5	0	0.33
4r	Offers childcare assistance to employees	48	19	17	11	5	3	1	0.32
4s	Organises wellness and stress prevention programmes	30	21	15	24	6	5	3	0.40
								Average RPI = 0.68	

demand of green buildings, and in that these practices are relatively well-established in firms and documented in the construction industry. Nevertheless, the results also show companies do care for the environment and society, through: assessing and managing the impact of overall business activities (item 7a; RPI = 0.79); and looking for opportunities to minimize air, water, noise, odour, vibration and undesirable visual impacts on the environment and local community (items 7h and 7j; with RPIs = 0.79). In supporting these, the results also show moderate effort in; purchasing green materials (item 7c; RPI = 0.72); using green technologies (item 7g; RPI = 0.69); managing the transport of their people, goods and services (item 7m; RPI = 0.68); educating their people about sustainability and efficiency energy use (item 7f; RPI = 0.66); and using green certified products with the use of independent third parties (item 7l; RPI = 0.66). Less attention was then given to land use and bio-diversity (item 7e; RPI = 0.61), and use of renewable energy (item 7e; RPI = 0.61). Overall, the findings point out that company environmental initiatives and activities are internally focussed and that supply chain impacts are not generally considered. This again supports Upstill-Goddard *et al*. (2012) whose analysis of responsible sourcing in the construction sector shows that the knowledge and awareness of how the supply chain impacts critically on environmental and social sustainability is low (this further explains the moderate average RPI score for our respondent companies' supply chain initiatives and activities). A number of possible reason for this are postulated such as: the very little research and guidance for those operating within the sector; the unfamiliarity of the concept to many construction professionals; perceived risks within the supply chain; and a tendency for moral concerns with child labour etc., to only extend as far as philanthropic initiatives. Upstill-Goddard *et al*. (2012) argue that responsible sourcing and supply chain risks will only come into focus when it is demanded by clients and our results would tend to support this assertion.

It is notable that companies have shown stronger commitment to their environmental initiatives (average RPI = 0.72) compared to their workplace (average RPI = 0.68), supply chain (average RPI = 0.61) and community engagement initiatives (average RPI = 0.41). This is probably a reflection of the relatively large amount of guidance and mature legislation in this area. As Loosemore and Phua (2011) found, while the firms they analysed had used well developed global indicators of environmental sustainability produced by organizations such as the

Table 5. Supply chain initiatives and activities.

Item code	Description	Frequency count: Never (1)	Rarely (2)	Quite rarely (3)	Some-times (4)	Quite often (5)	Usually (6)	Always (7)	RPI
Our company									
5a	Listens and works collaboratively with our product and service providers to resolve issues	0	2	0	5	26	46	25	0.83
5b	Treats our product and service providers fairly and with respect	0	2	0	5	17	46	34	0.86
5c	Works with our product and service providers to implement standards of acceptable social and environmental performance	1	4	6	21	21	35	16	0.74
5d	Integrates CSR criteria into our selection process for product and service providers	6	11	6	25	24	22	9	0.64
5e	Requires product and service providers to set and meet acceptable social and environmental performance targets	14	24	7	34	5	16	4	0.51
5f	Places greater emphasis on the social and environmental performance of our product and service providers than their price during the selection process	17	26	11	23	12	12	2	0.47
5g	Favours product and service providers run by minority groups	19	24	7	38	11	3	1	0.44
5h	Prefers purchasing products and services from local businesses than from overseas businesses	5	7	6	16	18	31	21	0.72
5i	Turns away product and service providers with poor CSR records	14	9	6	48	12	7	7	0.54
5j	Makes specific reference to our CSR record during marketing	12	22	4	35	14	11	5	0.52
5k	Screens our customers for their CSR record	17	31	4	40	10	2	0	0.43
5l	Works collaboratively with our customers to make our products and services more responsible	9	8	9	22	18	24	14	0.64
5m	Turns away business from customers with a bad CSR record	15	26	4	33	14	9	3	0.48
									Average RPI = 0.61

United Nations Global Reporting Initiative there was a dearth of equivalent benchmarks and guidance for them to follow in the social sustainability arena.

Tables 8and 9 document the results about perceived benefits and obstacles to CSR in the industry. One of the salient findings noted here is that the obstacles to CSR implementation (average RPI = 0.55) have outweighed its gains (average RPI = 0.51). In terms of perceived benefits, the findings further confirm that CSR is primarily market driven in that companies are striving to improve customer confidence (item 8a; RPI = 0.57) and brand recognition (item 8e; RPI = 0.55). There is also a strong "internal" dimension to CSR activities in that CSR is seen to benefit employee morale (item 8b; RPI = 0.55), staff loyalty (item 8c; RPI = 0.55) and staff retention (item 8f; RPI = 0.54). Reflecting a strong "internal" focus for CSR activities and uncertainty about links between CSR and corporate performance, the results also show a relatively high degree of scepticism that being a socially responsible corporate could help improve a company's public image (item 8a; RPI = 0.49) supporting Dolnicar and Pomering's (2007) research in the banking sector which found little public awareness of company CSR activities. Furthermore, the results provide further evidence of a lack of convincing evidence linking CSR to corporate performance (workforce productivity item 8h. RPI = 0.49; competitiveness item 8g. RPI = 0.48; financial performance item 8i. RPI = 0.43). Collectively these findings do not support Huang and Lien's (2012) research which showed that corporate image may serve as a mediator between CSR and organizational performance. They also indicate that the contemporary concept of "shared value" being promoted by Porter and Kramer (2011) to encapsulate their arguments around the mutuality of interests between society and business are not gaining traction in construction. Rather, it would seem that CSR in construction is what Porter and Kramer would describe as non-strategic, a conclusion which is further supported by the finding which shows that CSR is generally seen as more of a cost burden (item 9f; RPI = 0.70) rather than something which can provide competitive advantage. The fact that Scope is also seen as a high barrier (item 9h; RPI = 0.60) along with implementation costs (item 9g; RPI = 0.70) indicates that CSR is non-strategic, ad hoc and unfocused. It is not surprising that the culture of the construction and engineering industry (item 9f; RPI = 0.61) is a major barrier to CSR since this is also reflected in much of the construction CSR literature (Murray and Dainty 2008). It is also not surprising that the government, community and employees are the lowest barriers supporting recent research around government social procurement initiatives which require construction to demonstrate social impact in their bids (Loosemore

Table 6a. Community engagement focus and initiatives.

Item code	Description	RPI	Rank
Relationship with community			
6a	Understanding of the local communities' needs and concerns	0.61	
6b	Relationships with local communities	0.63	
6c	Response to community concerns	0.63	
Focus of community initiatives			
6d	Clients	0.87	
6e	Local council	0.74	
6f	Trade associations	0.71	
6g	Local neighbourhood	0.67	
6h	Environmentalists	0.65	
6i	Local charity/non-profit society groups	0.65	
6j	Media	0.60	
Community initiatives and activities			
6k	Donates assets to community causes (e.g. by giving old office furniture or equipment such as old PCs)	0.54	2
6l	Sponsors events, arts or sports clubs	0.52	3
6m	Match-funds employee donations to chosen causes	0.45	4
6n	Partners with charity or community organizations	0.41	5
6o	Loans facilities and assets to communities (e.g. allowing a community group to use our premises or in-house facilities)	0.32	6
6p	Helps to promote social cohesion in the community (e.g. by offering immigrants and refugees points of contact to their new culture by visits to the premises of the enterprise etc.)	0.30	7
6q	Provides loans below commercial interest rates for community initiatives (e.g. for start-up businesses in socially deprived communities etc.)	0.21	8
6r	Donates cash in support of community or charity organizations	0.62	1
	Average RPI	0.41*	

*NB: The average RPI was computed based on the RPIs of items 6k to 6r.

Table 6b. Community causes.

Description	Frequency
Number of companies that are	
Aligned with a particular community case	35 (33.65%)
Not aligned with a particular community case	69 (66.35%)
Number of years that those companies are aligned with the particular community case	
<1 year	1 (3.33%)
1–5 years	12 (40%)
6–10 years	10 (33.33%)
11–20 years	4 (13.33%)
>20 years	3 (10%)
Not sure	5 (14.29%)

2016). Long-standing research in corporate governance (Freeman and Evan 1990) and corporate citizenship (Valor 2005) also shows that communities are more supportive of socially responsible companies and research by numerous researchers like Battaglia *et al*. (2014) which show that younger employees also value their employer's CSR record. However, it is ironic, given that the focus of CSR activities in our sample in mainly on clients, that clients are also seen as a moderate barrier to CSR by our respondents (RPI = 0.54). This tends to support Loosemore and Phua's (2011) CSR research which shows that many construction clients are not prepared to pay for CSR and do not see social and environmental initiatives on the construction projects they procure as adding value to their core business objectives. Given strong government support (item 9a; RPI = 0.48) and attitudes of society (item 9e; RPI = 0.49) are the two lowest barriers to CSR, our results suggest it is mainly the construction market which is holding CSR back.

In exploring if there were significant differences among small, medium and large size firm in their CSR initiatives, perceived benefits and obstacles identified above, a KH test was conducted. Overall, the KH test results show a significant divergence in practices between large, medium and small firms in the sample, supporting the work of Lou *et al*. (2011), Glass *et al*. (2011), Upstill-Goddard *et al*. (2012) which shows that while CSR is being experimented with by a few major firms, it not a consideration for the vast majority of small-to-medium-sized enterprises in the rest of the sector. In terms of company CSR strategy focus it was found that there are statistically significant differences on items 3a, 3b, 3e and 3f (with KH values ranging from 6.468 to 10.989, $p < 0.05$) among small (with mean ranks ranging from 44.07 to 49.57), medium (with mean ranks ranging from 50.00 to 56.30), and large size firms (with mean ranks ranging from 61.50 to 75.09). The findings generally indicate that larger size firms had shown greater commitment to their occupational health, welfare and safety (item 3a), environmental management (item 3b), gender equity (item 3e) and cultural (item 3f) diversity policies than their smaller size counterparts. This is further reinforced by the post hoc test results that small size firms were significantly less committed than their large ($\chi^2 = -17.432$, $\rho = 0.032$) and medium size ($\chi^2 = -12.236$, $\rho = 0.011$) counterparts on their occupational health and show that both small ($\chi^2 = -25.523$, $\rho = 0.024$) and medium size firms ($\chi^2 = -25.091$, $\rho = 0.020$) had shown significantly lower commitment than their large size counterparts in their environmental management, gender equity and cultural diversity policies. Of these, we also found that small (with corresponding mean ranks of 46.78 and 43.53), medium (with corresponding mean ranks of 52.09 and 52.08) and large size firms (with corresponding mean ranks of 73.83 and 84.82) had significantly different levels of commitment in minimizing the impact of their business activity on the environment (item 7a; KH = 7,360, $p = 0.025$), and offering counselling services to their employees (item 4m; KH = 16.346, $\rho = 0.000$). Once

Table 6c. Community initiatives and activities.

Item code	Description	Frequency count: Never (1)	Rarely (2)	Quite rarely (3)	Some-times (4)	Quite often (5)	Usually (6)	Always (7)	RPI
Our company									
6k	Donates assets to community causes (e.g. by giving old office furniture or equipment such as old PCs)	11	17	10	33	11	15	6	0.79
6l	Sponsors events, arts or sports clubs	18	11	10	37	9	8	9	0.8
6m	Match-funds employee donations to chosen causes	26	18	18	21	6	9	6	0.72
6n	Partners with charity or community organizations	37	15	9	23	8	7	4	0.59
6o	Loans facilities and assets to communities (e.g. allowing a community group to use our premises or in-house facilities)	51	21	8	14	1	7	2	0.61
6p	Helps to promote social cohesion in the community (e.g. by offering immigrants and refugees points of contact to their new culture by visits to the premises of the enterprise etc.)	55	20	11	8	2	5	2	0.66
6q	Provides loans below commercial interest rates for community initiatives (e.g. for start-up businesses in socially deprived communities etc.)	77	14	6	5	1	1	0	0.69
6r	Donates cash in support of community or charity organizations	9	11	4	34	15	18	12	0.79
									Average RPI = 0.41

again, the post hoc test findings reveal that large size firms had exhibited a significantly higher commitment over their small size counterparts on item 7a ($\chi^2 = 27.034$, $\rho = 0.020$) and item 4m ($\chi^2 = 41.291$, $\rho = 0.000$). All these results support Udayasankar's (2008) research that the larger the firm, the greater the scope and depth of their CSR activities. This is particularly notable in companies' community engagement initiatives and activities, in that small (with mean ranks ranging from 37.62 to 50.61), medium (with mean ranks ranging from 49.87 to 56.80) and large size firms (with mean ranks ranging from 72.27 to 80.64) had shown significantly different level of commitments on items 6m, 6n, 6o and 6p (with KH values ranging from 6.345 to 20.428, $p < 0.05$). The post hoc test results also reveal that large size firms were more committed than their small counterparts in match-funding employee donation (item 6m; $\chi^2 = 43.015$, $\rho = 0.000$), partnering with charity organizations (item 6n; $\chi^2 = 29.537$, $\rho = 0.010$), and loaning facilities and assets to communities (item 6o; $\chi^2 = 24.388$, $\rho = 0.034$). Besides this, they also showed significantly higher commitment than medium size firms in helping their local community to promote social cohesion (item 6p; $\chi^2 = -22.407$, $\rho = 0.041$). Interestingly, these findings do not support Sen's (2011) and Loosemore and Phua's (2011) research which suggests that smaller size firms are more imbedded in their local communities, which is why they often do not recognize or use the term CSR. However, in terms of their supply chain initiatives, the KH test results show that small, medium and large size firms had significant different level of preferences for local businesses (KH = 7.350, $\rho = 0.025$; with the corresponding mean ranks of 62.30, 45.48 and 55.27), but, surprisingly, it is small size firms that had shown higher preference over their medium size counterpart ($\chi^2 = 16.815$, $\rho = 0.021$) in procuring from local over overseas businesses.

Table 6d. Community causes.

Description	Frequency
Number of respondent companies that are	
Aligned with a particular community case	35 (33.65%)
Not aligned with a particular community case	69 (66.35%)
Total	104
Number of years that those companies are aligned with the particular community case	
	1 (3.33%
1–5 years	12 (40%)
6–10 years	10 (33.33%)
11–20 years	4 (13.33%)
>20 years	3 (10%)
Total	35

Turning to company ownership, the MU test results reveal that public companies have placed higher focuses than privately held companies on gender equity and diversity (3e; MU = 311.5, with corresponding mean ranks of 74.04 and 49.42), racism/cultural diversity and equity (3f; MU = 401.5, with corresponding mean ranks of 67.12 and 50.41), disabled (3g; MU = 380.5, with corresponding mean ranks of 68.73 and 50.18) and corruption (3k; MU = 293.5, with corresponding mean ranks of 75.42 and 49.23). Another interesting trend noted from the MU test results is that public companies had shown higher commitment than privately held companies in implementing employee counselling services (4m; MU = 293.5 with corresponding mean ranks of 75.42 and 49.23), match-funding employee donations to chosen causes (6m; MU = 348 with corresponding mean ranks of 71.23 and 49.82) and partnering with charity or community organizations (6n;

Table 7. Environmental initiatives and activities.

Item code	Description	Frequency count							RPI
		Never (1)	Rarely (2)	Quite rarely (3)	Some-times (4)	Quite Often (5)	Usually (6)	Always (7)	
Our company									
7a	Assesses and manages the environmental impacts of our business activities	4	2	3	10	21	36	27	0.79
7b	Seeks to improve energy efficiency in our products and services	2	1	3	11	20	42	25	0.8
7c	Purchases "green" materials (e.g. using timber from sustainable sources)	3	5	4	25	21	26	20	0.72
7d	Uses renewable energy to supplement an enterprise's primary source of energy (e.g. by fitting photovoltaic cells to buildings etc.)	4	17	8	36	16	9	14	0.59
7e	Considers land use and bio-diversity in its business decisions	8	8	8	38	12	16	12	0.61
7f	Encourage and educates employees about sustainability and efficiency energy use	4	8	9	23	30	14	16	0.66
7g	Uses "green" technologies that use fewer resources	3	12	7	25	20	21	16	0.69
7h	Acts to minimize air, water and other forms of pollution in our business activities	1	3	6	12	16	41	25	0.79
7i	Acts to minimize the treatment and disposal of hazardous waste	1	2	2	18	14	33	34	0.8
7j	Acts to minimize noise, odour, vibration and undesirable visual impacts of our business activities on the local community	2	3	4	14	17	35	29	0.79
7k	Encourages the reuse and recycling of materials and minimization of waste	2	2	2	15	15	38	30	0.8
7l	Uses certified products with the use of independent third parties to verify how products are produced	4	12	7	27	16	19	19	0.66
7m	Considers and manages the environmental impacts from transport of our people, goods and services	5	6	7	27	20	22	17	0.68
								Average RPI = 0.72	

Table 8. Perceived benefits of CSR implementation.

Item Code	Description	Frequency count							RPI
		Never (1)	Rarely (2)	Quite rarely (3)	Some-times (4)	Quite often (5)	Usually (6)	Always (7)	
8a	Public image	21	15	16	24	11	11	6	0.49
8b	Employee morale	17	9	9	33	14	16	6	0.55
8c	Employee loyalty	19	10	9	30	12	15	9	0.55
8d	Customer confidence	17	8	10	26	15	21	7	0.57
8e	Brand recognition	17	12	15	24	10	16	10	0.55
8f	Employee retention	19	10	12	29	12	13	9	0.54
8g	Competitive advantage	23	13	18	24	10	11	5	0.48
8h	Workforce productivity	20	13	19	24	14	11	3	0.49
8i	Financial performance	17	16	17	25	14	12	3	0.50
								Average RPI = 0.51	

Table 9. Obstacles to CSR implementation.

Item code	Description	Frequency count							RPI
		Never (1)	Rarely (2)	Quite rarely (3)	Some-times (4)	Quite often (5)	Usually (6)	Always (7)	
9a	Governmental support for CSR	23	12	13	32	14	5	5	0.48
9b	Attitudes of employees	19	15	11	32	19	6	2	0.49
9c	Attitudes of clients	17	13	8	29	18	16	3	0.54
9d	Availability of "green" technology'	16	11	13	35	15	8	6	0.52
9e	Attitudes of society	16	15	17	33	15	6	2	0.49
9f	Culture of the construction industry	12	7	5	33	22	17	8	0.61
9g	Implementation costs	8	2	9	22	18	24	21	0.70
9h	Scope of CSR (i.e. bottomless pit)	13	4	6	40	16	17	8	0.60
								Average RPI = 0.55	

MU = 340 with corresponding mean ranks of 71.85 and 49.74). As suggested by Rangan *et al*. (2012), this trend could be driven by public companies towards enhancing public relations in the local communities and boosting their brand reputation. In particular, their economic return is often related to their public image and value.

Conclusion

The aim of this paper was to explore how firms construct and operationalize CSR in practice, how firms incorporate CSR into their business strategies and what forms these take. Through an online survey of 104 firms from across the construction supply chain in Australia and New Zealand, the results provide some new insights into the nature and structure of CSR strategies employed in the construction and engineering sector. It is important to recognize that these findings are set within a certain cultural, social, economic and political context and that as the industry changes in response to regulatory and social imperatives, the patterns of CSR activity we have reported in this paper are also likely to change. It is also important to recognize the limitations of extrapolating from a survey constrained to New Zealand and Australia to other countries, and we would caution in doing this until similar research is undertaken in other contexts. Furthermore, this study is of exploratory nature and the sample size of 104 was relatively small. The research findings thus need to be interpreted closely within its context and provide only an indicative, rather than a conclusive, trend of CSR in construction. Particularly, we acknowledged that different types of companies (i.e. architectural, contractors, suppliers and subcontractors) could have varying emphasis on different CSR initiatives.

Nevertheless, within these limitations, the results indicate that CSR in construction is largely informal, unstrategic, unsophisticated, narrowly focussed, compliance and market driven and in a low state of maturity. Although all firms see the benefit of CSR, the link to performance is unclear and it is mainly large size firms which are investing in CSR. There is also a reluctance to engage in supply chain reform to achieve stated CSR aspirations. More research is needed to investigate any links (both real and perceived) between CSR and business performance and to explore the barriers to supply chain reform that is central to achieving CSR objectives in such a fragmented industry. The results also show that although CSR is on the business agenda, there is little sense that firms are willing to put it at the centre of their business and that there is a fear that if they did so, they would lose rather than gain competitive advantage in the market. CSR initiatives that do exist appear to be internally focussed and reflect an "old school" philosophy and to largely ignore the mutuality of interests between the community and business. There is little sense of strategic focus in our results and the potential social capital that could be gleaned from building better strategic relationships with communities appears to be ignored.

These results have several implications for construction management research and practice. First, in moving construction CSR research forward it suggests that the project-based nature of construction work and the transient nature of communities in which it works requires an adapted theoretical lens to guide future CSR research. Current models of CSR such as Carroll's (1991) pyramid, while useful, are limited by their static nature and their inability to reflect how firms operating in the construction supply chain need to adjust and adapt their CSR strategies to fit with the social, environmental and economic profiles of local communities in which they build. Client and local government requirements and priorities also change from project to project and need to be accommodated in such models. Second in understanding the problem of supply chain reform, institutional theory may be useful as a conceptual lens to unlock the path dependencies and established ways of working which prevent the integration of socially responsible organizations such as social enterprises into the construction supply chain (and conversely the ejection of irresponsible firms out of the supply chain). Third, current CSR models fail to adequately consider the significant differences we have uncovered in this research between the CSR activities of large and small firms. Further research is clearly needed in this area.

Finally, from a practical perspective, our results also show that firms in construction could also benefit significantly from following some core principles of good CSR practice. First, focus on a few causes to use limited resources effectively and develop a strong constituency of community, client and supply chain partners. Second, it is important to focus on issues which are of concern to the community and clients, rather than impose firm's priorities on them. Third, it is important to choose causes that align with a firm's core business values and goals. Not only does this potentially maximize returns on investments but it ensures that a firm will be treated with less scepticism and taken more seriously by stakeholders. Fourth, it is important to choose sustainable causes because consistency of focus and dedication to a cause maximizes the chance of building strong and meaningful partnerships with communities, builds credibility with stakeholders and ensures CSR initiatives are more sustainable in the long-term. Finally, it is important to choose a cause there is previous experience which will enable the firm to capitalize on existing resources and knowledge such as people/partners with expertise in this area, existing marketing channels

and technologies which may be brought to bear on the need at hand.

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