

ATTITUDES OF AUSTRALIAN CONSTRUCTION ORGANISATIONS TOWARDS SUSTAINABILITY MANAGEMENT

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Abstract

Sustainability management has been touted to be the next strategic weapon for organisational competitiveness. Despite this recognition, very few studies have been done to investigate the sustainability management of construction organisations. The aim of this paper is to investigate the attitudes of construction organisations towards sustainability management. Under this aim, the specific objectives are to: (i) examine the main environmental challenges driving the implementation and management of sustainability practices within construction organisations; (ii) review the organisations' annual and sustainability reports; (iii) identify the types of environmental management initiatives adopted by the construction organisations; and (iv) establish a link between sustainability and competitive advantage. Data were collected via review of relevant organisational documents. Thereafter, content analysis was conducted. The results show that some organisations have embraced a positive attitude to sustainability however there is need for training and change in individual and organisational behaviour to achieve long term sustainability targets. This study provided an evidence of relationship between sustainability management and competitiveness for further sustainability management research and policy making.

Keywords: Sustainability management, construction organisations, competitiveness.

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1. Introduction

Construction is the one of the most significant contributor to most economies both in terms of GDP and employment. In Australia it accounted for 6.8% of GDP and employed 9.1% of the Australian workforce, making it Australia's fourth largest industry (ABS, 2010) however; this highly important and value providing sector is underperforming in terms of sustainability (Mill and Glass, 2009). It is generally been accepted in Australia that sustainability needs to be the top priority of businesses; however in practice many organisations struggle to embrace and implement sustainability beyond minimum compliance (Chiveralls, 2011). Shen and Tam (2002) emphasised that a major reason for this low implementation is that environmental and social commitments are seen as an extra expense rather than a benefit.

There is an increased pressure on construction organisations to manage their sustainability performance, especially in the environment of uncertainty in financial markets, increased competition due to globalisation and increased government priorities towards sustainability. However management of organisational sustainability is not an easy process, as it may require organisations to analyse their business environment and change their strategic endeavour and behaviour, towards adopting sustainable ideas and practices for improved competitiveness. In the last decade sustainability management is emerging as a key approach for organisations to remain viable in competitive business environment. It addresses the problem of organisation's contributions to sustainability in an integrative way by presuming that organisations could only contribute to sustainable development if there presents a business case for such contribution (Figge et al., 2001). The concept of sustainability management is well developed in the management literature; however it is relatively new in the domain of construction. This paper is a part of a larger research project which aims to investigate sustainability management of construction organisations. The objectives of this paper are to (i) examine the main environmental challenges driving the implementation and management of sustainability practices within construction organisations; (ii) review the organisations' annual and sustainability reports; (iii) identify the types of environmental management initiatives adopted by the construction organisations; and (iv) establish a link between sustainability and competitive advantage.

The scope of this research is to review the sustainability related documents of top 25 Australian construction organisation listed in Australian Securities Exchange (ASX). Only top organisations were chosen because they represent 68 percent of the total work done within Australia.

2. Sustainability and its implementation in Construction

Sustainability addresses the impact of human development on the existing physical and social structure of society and its natural systems (Khalili, 2011). Sustainability is multi-dimension concept comprising: environment, society and economy. With growing concerns about global warming, climate change and continuous loss of natural resource construction organisations are under an enormous pressure to incorporate sustainability into their business. To be sustainable organisations are required to reduce environmental impacts and provide social equity along with making profitable business. Dyllick and Hockerts (2002,

pg.138) defined corporate sustainability as “meeting the needs of the firm’s direct and indirect stake holders, without compromising its ability to meet future stakeholder needs as well”. In the past decades, there are many initiatives taken globally and on government level to introduce the concept of sustainability in construction. There are many frameworks available for example environmental management systems (EMS), corporate social responsibility (CSR) and global reporting initiative (GRI) to integrate sustainability. However, construction organisations are considered as one of the worst in adopting sustainable practices. The motivations for the practitioners to implement EMS are not primarily for achieving sustainability. Ofori et al. (2002) identified that organisations seek certification mainly because of clients or end-purchasers’ demands.

Many researchers have investigated attitudes and behaviour of construction organisations. Petrovic-Lazarevic (2008) examined Australian construction organisations about their attitudes to sustainability via the application of ISO14001 EMS as part of their firms’ CSR. He reported that the majority of the firms interviewed have ISO14001 EMS certification in place, and the reasons for applying EMS include competition, quality improvement, community requirements, increased public awareness and clients’ requirements. Similarly Myers (2005) analysed public disclosures of UK’s construction organisations and outlined that only a few large- sized companies have shown positive commitments for the increased emphasis on sustainable development in their construction activities. This is line with Mills and Glass (2009) that outlined that skill deficit and is one of the reasons of this slow implementation.

Tam et al. (2002) and Shen and Tam (2002) reported that Hong Kong contractors are not adopting sustainability because: (i) cost and time are the main performance criteria; (ii) the clients do not support extra cost of sustainability and (iii) they do not have capacity to implement environmental management systems. Christini et al. (2004) had similar findings and reported that few construction companies have adopted EMS in their business operation due to limited organisational resources and lack of mutual commitment from the industry partners.

Zainul Abidin (2010) investigated the awareness and application of sustainable construction in Malaysia and found that the concept of sustainability is not widely received in the industry as many developers, especially small and medium companies, are still reserving themselves. He also pointed out that sustainability implementation is low because of several factors such as lack of knowledge, poor enforcement of legislation and passive culture of construction organisations. A similar study done by Sakr et al. (2009), discovered that there is low dissemination of information about ISO 14001/EMS among the top contractors due to the absence of the role of local institutions in promoting these systems.

Ofori et al. (2000) surveyed Singaporean construction organisations on their attitudes towards implementing ISO14000 environmental management system (EMS), and found that: (i) most organisations adopted a wait-and-see attitude towards EMS implementation; (ii) there is a lack of knowledge of ISO14001 standards within the industry; and (iii) shortage of qualified personnel and the fragmented nature of the industry are key hurdles faced by construction companies. However a decade later Oo and Lim (2011) studied the attitudes

and behaviour of Singapore contractors towards environmental sustainability, and found that the contractors are increasingly recognising sustainability as a tool for competitive advantage. Also, they ascertained that improved materials efficiency and increased government financial incentives are key drivers for sustainability.

3. Sustainability Management

Sustainability management is emerging as a key strategy for organisations to achieve sustainability and being competitive at the same time. It addresses the problem of organisation's contributions to sustainability in an integrative way, presuming that organisations could only contribute to sustainable development if organisational performance improves in all three dimensions of sustainability simultaneously (Figge et al., 2001). While conflicts between the three performance categories of sustainability (social, ecological and economic goals) may occur, corporate sustainability management identifies and realises opportunities for simultaneous improvements in all three dimensions in order to achieve strong corporate contributions to sustainability (Figge et al., 2002).

According to Figge et al. (2001) the integration of the three pillars of sustainability into general business management by a pragmatic approach offers two advantages. First sustainability practice that is economically sound is not endangered by economic crisis because it is not only carried out as long as the organisation is successful. Usually, if organisations find themselves under financial distress, those costs that are perceived as not contributing to the economic success are cut first. Secondly it could contribute to competitiveness, as the organisation serves as an appropriate role model for other businesses.

Salzmann (2005, p: 30) defined sustainability management as "The strategic and profit-driven corporate response to environmental and social issues that are caused through the organisation's primary and secondary activities". It incorporates organisations willingness to integrate social and environmental issues systematically and persistently into their business strategies. This could be done by providing an economic rationale or business case for sustainability. Bansal and Roth (2000) argued that the business case (e.g. improved processes and reputation) the greater will be the motivation for the sustainability management.

Epstein and Roy (2003) argued that managers can truly integrate social and environmental aspects into their business strategies only by making the business case for social and environmental performance. This view is shared by Schaltegger (2008) who outlined that the business case for sustainability is characterised by creating economic success through (and not just along with) a certain environmental and/ or social activity. He further explained that business case for sustainability is not an automatic relationship with general practices it has to be created actively through an intelligent sustainability management approach.

Afzal and Lim (2012) have provided a conceptual framework for sustainability management of construction organisations. This framework explains that external environmental forces such as legislation, stakeholder pressure and economic opportunities and threats shape up

internal organisational features. If these features (organisational culture; organisational structure; employee skills and attitudes; supply chain capabilities; technological capabilities and business strategies) are managed properly they could improve sustainability performance of organisations and this could in turn provide competitive edge.

4. Linkage between sustainability and competitive advantage

Many researchers have studied the relationship between sustainability and competitive advantage, mainly in manufacturing and IT industry. Madu (2004) argued that environmental management is a key to achieve competitiveness market, he has given examples of Xerox and Kodak; both companies have remained financially successful through re-manufacturing of products. Schaltegger and Synnestvedt (2002) have examined the relationship between sustainability and economic success and outlined that management is the trigger between these two. This view is in line with Salzmann (2006) who asserted that sustainability management is the key for organisations to remain competitive.

Wagner and Schaltegger (2003) conducted a comprehensive review of literature on the link between sustainability performance, business competitiveness and economic success. Wagner (2005) studied the relationship between environmental and financial performance across paper industry and manufacturing firms across Europe. He reported environmental performance has no relationship with financial performance for the firms that are not pursuing a value oriented environmental strategy. However firms that make strategic choice seems like to achieve a positive relationship between environmental and economic performance.

Bryson and Lombardi (2009) claimed that evidence from the property development industry suggests that integration of sustainability as a distinctive competency in a firm's strategy results in the identification of profitable market niches. This is in line with Tan et al. (2011) who outlined that sustainability performance can contribute to business competitiveness. However, little research has been done on examining the relationship between sustainability and business competitiveness in the context of the construction industry.

5. Research method

This research adopted a survey research design which involved a systematic review of the contents of annual reports and websites of the major public listed construction organisations. Organisations' attitudes towards sustainability management were analysed by the reporting of organisation's commitments towards environment and society.

Content analysis as a research method is a systematic and objective mean of analysing any written, verbal or visual communication messages (Weber, 1985). Content analysis is widely used in sustainability related research (e.g.: Zeghal and Ahmed (1990); Myers (2005); Gill et al. (2008)) to survey published accounts. According to Krippendorff (1980) the value of content analysis lies in the assumption that the extent of disclosure can be taken as some indication of the importance of an issue to the reporting organisation.

The construction industry in Australia comprises around 320,000 enterprises. Of these enterprises, over 60% are sole traders, with nearly 30% employing between 1 and 4 people. However Housing Industry Association (HIA) indicates that in 2006-07, the largest 100 commercial construction organisations won contracts worth 68% of all work started in the year to March 2007. The 10 largest organisations won 55% of the work won by the largest 100 companies in the sector in 2006-07, while the largest 20 organisations accounted for 71%. Therefore large organisations represent the common trends of the overall industry. Considering this fact a sample of top 25 construction organisations listed on Australian stock exchange (ASX) was selected based on their number of employees and annual turnover.

For each organisation the annual report and any separate sustainability report for the year 2011 were collected and analysed. Furthermore organisation's websites were also researched for any information related to sustainability management. The analysis of disclosure was undertaken to identify whether the organisations included environmental commitments and social responsibility in the annual reports. Furthermore the website information of the sample organisations were analysed to search the following key phrases: sustainability, sustainability management, business case for sustainability; competitive advantage through sustainability.

6. Results and Discussion

Table1 shows that only 36 percent of the organisations publish discrete sustainability reports. The overall percentage of material relating to environmental and social commitments disclosed in annual report is very low ranging from as little as one percent to seven percent. Out of all the organisations 32 percent did not include any material on sustainability in the annual report. Corporate website appears to provide more diverse coverage of sustainability; 96 percent of organisations have reported sustainability commitments on the corporate website.

Table1: Analysis of publicly available information on sustainability

ORGANISATIONS	Annual report no of pages	% pages on Environmental commitments	% pages on Social commitments	Separate sustainability report	Sustainability commitments on website
Abigroup Limited Australia	43	2.56	6.97	▲	▲
AVJENNINGS LIMITED Australia	88	0	2.27	△	▲
Brierty Limited Australia	84	0	2.38	△	▲
Calibre Group Ltd Australia	45	0	8.8	△	▲
Civmec Ltd Australia	N/A			△	▲
Coffey International Limited Australia	116	0	0.86	△	▲
Downer EDI Limited Australia	20	35	25	▲	▲
FKP Property Group Australia	112	0.86	0.86	△	▲
Forge Group Limited Australia	87	0	0	△	▲
Leighton Holdings Limited Australia	136	0	0	△	▲
McConnell Dowell Corporation	24	8.3	4.6	▲	▲

Mirvac Group Australia	105	0	0	▲	▲
Monadelphous Group Limited Australia	22	0	0	△	▲
Multiplex Group Australia	N/A			▲	▲
Norfolk Group Ltd Australia	N/A			△	▲
NRW Holdings Limited Australia	83	1.2	1.2	△	▲
RCR Tomlinson Limited Australia	118	0	3.3	△	▲
Stockland Australia	8	14	28	▲	▲
Structural Systems Limited Australia	68	0	0	△	▲
Transfield Services Limited Australia	143	1.39	2.3	▲	▲
UGL Limited Australia	96	0	0	▲	▲
VDM Group Limited Australia	84	0	0	△	△
Sunland Group Limited Australia	N/A			△	△
Watpac Limited Australia	144	2.08	2.7	△	▲

▲ Organisations with separate sustainability report and sustainability commitments on website

△ Organisations without separate sustainability report and sustainability commitments on website

From Table 2 it is interesting to know that among the organisations who published discrete sustainability reports only eight percent indicate the presence of business case for sustainability; furthermore the word sustainability management could be found only once. Six percent of the sample reported to have gained competitive advantage through sustainability. This result indicates that construction organisations within Australia have acknowledge that sustainability needs to be a priority, however only a few exceptionally large organisations are incorporating sustainability into their business values as a profit source. It is also clear that there is a need for educating construction workforce about the potential competitive advantage they can achieve through sustainability management

Table 2: percentage of sample containing key words

Key words	% of organisations
Sustainability	96
Sustainability management	4
Business case for corporate sustainability	8
Competitive advantage through sustainability	6

The main environmental challenges driving the implementation and management of sustainability practices, as indicated in the published literature are summarised in Table 3. It is noticed that uncertainty in the global markets is considered as the biggest challenge, as reflected in the annual reports of most organisations (approximately 80 percent). On the other side only 46 percent of the organisations reported that carbon tax will influence future business strategies. High cost associated to sustainability is also recognised as an important issue, this cost include cost of building materials and transportation cost. Furthermore, the findings show that skill deficiency (about 65 percent) is one of the organisational barriers towards implementing sustainability practices, however; it is promising to notice that organisations have shown commitment towards employee skill and training.

Table 3: Challenges for sustainability

Challenges for sustainability	% of organisations
Skill deficiency	67%
High cost associated to sustainability	77%
Carbon Tax	46%
Uncertainty in global market	80%

Table 4 summarises the written commitments of organisations towards different sustainability initiatives. The top initiative adopted by most organisations (80 percent) is employee health and safety. This is followed by employee training and education (78 percent). These high commitments towards employee could be linked to the conceptual framework of Afzal and Lim (2012) which postulates that skills and knowledge of employees can be a source of competitive advantage. Seventy two percent of the organisations are engaged with community through diverse range of activities such as supporting charities, engagement in indigenous well being programs and supporting student scholarships. Material waste is identified the least adopted initiative.

Table 4: Sustainability Initiatives adopted by organisation

Sustainability Initiatives adopted by organisation	% of organisations
Reduce green house gas emissions	64%
Employee Health and Safety	90%
Community engagement	72%
Stakeholder engagement	60%
Employee training on sustainability	78%
Reduce Material waste	56%

In relation to the certification (as shown in Table 5) most organisations (68 percent) reported to hold ISO 14001 certification for environmental management. Sixteen percent have also included the global reporting initiatives (GRI) guide lines in their sustainability reports. A small group (12 percent) followed green building certification. Along with these 20 percent of sample also hold membership for NSW government sustainability advantage programme.

Table 5: Sustainability reporting systems used by organisations

sustainability reporting system	% of organisations
ISO 14001	68%
Global reporting initiative	16%
Green building	12%

The results of this study indicate that the majority of organisations analysed are beginning to acknowledge sustainability (96 percent included sustainability commitments on organisational website). Most of the organisations have separate sections for environmental commitments such as strategies for energy efficiency, water conservation and waste minimisation. Similarly social commitments such as employee well being, health and safety and engagement with community is also well documented. The commitments of construction organisations to adopt different sustainability initiatives seem promising and this could be the beginning of a more sustainable construction future. Most organisations have published these commitments on their website nonetheless only 36 percent of the organisations published separate sustainability report which not only include commitments but also give information on how the sustainability was achieved.

In regards to the attitudes towards sustainability management the results indicate that this concept is exceptionally new in construction domain; only one organisation has reported a framework to manage sustainability. The business case for sustainability is also a novel theme with merely 8 percent of organisations used the term. The results also provided evidence that construction organisations are gaining competitive edge through sustainability, however this relationship is only recognised by few industry leaders and it might take some time to become an industry norm. It is also significant to note that the organisations which claimed to gain competitive advantage are the ones that reported to have business case for sustainability.

7. Conclusion

Sustainability has been an important agenda for construction organisations. This study adopted a survey approach involving content analysis of top public listed Australian construction organisations. On the basis of publicly available information and material, the survey findings suggest that most of the selected construction organisations have acknowledged sustainability. They recognise that economic success only does not add value to an organisation's profile, it is also judged by its social and environmental performance. Sustainability management is emerging as an alternative approach to conventional strategies to achieve sustainability. It is unique in nature because it emphasises on both financial and sustainability performance of organisations. This research showed that the attitudes and behaviour of construction organisations are becoming positive towards sustainability; with an anticipation to gain financial benefit and competitive advantage associated to it.

This study will contribute to knowledge by investigating the potential application of sustainability management within construction organisations. This study appears to be the first empirical research providing link between sustainability and competitive advantage in the domain of construction. The results could be used as a guide by construction organisations to become more sustainable and competitive simultaneously. However it is acknowledged that the survey data is only based on publicly available information on organisational website and annual reports and might not represent the actual practice. Other

limitation of this study belongs to the small sample size and limited indicators used in the analysis thus the results are not definitive but indicative of an apparent trend. Therefore, further and detailed investigations should be conducted for more generalised findings.

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