



Review

Conceptualising the state of the art of corporate social responsibility (CSR) in the construction industry and its nexus to sustainable development



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ABSTRACT

Corporate social responsibility (CSR) is a widely embraced social phenomenon and has attracted increasing research interests in the construction industry recent years. However, their coverage of the issues pertaining to CSR in the construction industry are isolated and less comprehensive, failing to encompass the multifaceted nature of the construction industry. This study aimed to reveal and conceptualise the CSR's state of art in the construction industry. Following a systematic selection of 68 papers published in different journals between 2000 and 2017, the inductive and deductive content analysis of these papers reveal four research themes of current CSR research in the construction industry, comprising CSR perception, CSR dimensions, CSR implementation and CSR performance. A conceptual framework was developed accordingly to reflect the CSR research state of art in the construction industry. Furthermore, given the nexus between CSR and sustainable development, insights for enhancing CSR contribution to sustainable development, and sustainable development goals (SDGs) in the construction industry were proposed, including changing the traditional procurement practices, improving legislation for environmental responsibility, integrating CSR dimensions and increasing CSR implementation in small to medium enterprises (SME). The findings of this study will deepen the understanding of CSR in the construction industry, and provide practical implications for different stakeholders in the construction industry to contribute more effectively to sustainable development.

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1. Introduction

Corporate social responsibility (CSR) is a widely embraced social phenomenon, particularly in the financial, resources, and trade and retail sectors, where the business activities generate substantial stakeholder interests. In the construction industry, CSR is becoming a growing agenda in recent years, mainly for two paradoxical reasons. On one hand, the construction industry is intrinsically 'irresponsible' (Lu et al., 2015) whereby different construction activities such as the extraction, processing and transportation of raw materials, design, construction, and demolition of built products use excessive resources and energy (Zhao et al., 2012). This adversely affects the physical environment and ecosystem in the forms of greenhouse gas emissions, dust, waste, carbon emission, and general air pollution (Barthorpe, 2010; Ozorhon, 2013; Zou and Couani, 2012). Additionally, construction activities are generally labour intensive with a high exposure to accidents, thereby making construction a less healthy and safe undertaking for construction workers (Close and Loosemore, 2014; Jiang and Wong, 2016). Furthermore, as a result of the extreme competition and the affinity for profit making in the construction industry, many construction organisations have to operate under unsafe and unhealthy conditions, and in certain spheres, they engage in the globally condemned child labour practices (Jiang and Wong, 2016; Lu et al., 2015; Roberts et al., 2009; Xiong et al., 2016).

On the other hand, the construction industry is socially responsible as it materialises the built environment through the creation of a wide variety of necessary buildings, industrial plants and other infrastructures (Jiang and Wong, 2016), which are instrumental to enhancing the health, economic, social and cultural aspects of humanity (Xiong et al., 2016). Through the creation of necessary infrastructure, the construction industry helps to shape the social lifestyle of people (Jiang and Wong, 2016). The construction industry is also a major source of employment by providing job opportunities and the means of livelihood for professional practitioners, skilled and unskilled labourers (Lu et al., 2015). For example, the construction industry is the third largest employing industry in Australia, at the rate of 9.1% of the total employment in 2015 (Australian Department of Employment, 2015). In addition, given the link between the construction industry and other industries, these developments mentioned above have economic multiplier effects such as developing and creating jobs in other industries (Loosemore, 2016; Othman, 2009).

Therefore, given the paradox above, the research on CSR in the construction industry has been emphasizing on sustaining the responsible aspects of construction activities, while eliminating the irresponsible ones. As pointed by Zhu et al. (2011), it is an ongoing

challenge, which has attracted increasing research interest. Roberts et al. (2007) reveal that the construction industry's growing commitment to reducing the impacts associated with its business operations can affect both society and the environment at large. In this regard, construction activities in the construction industry can either directly or indirectly contribute to achieving the some of the sustainable development goals (SDGs). For instance, the SDGs of food, health, education, women, water and energy need reliable built products in the construction industry to achieve them (Ede et al., 2016). Meanwhile, the stakeholders, who either affect, or are affected by construction activities, are increasingly showing concern and demanding the implementation of CSR from construction organisations (Close and Loosemore, 2014; Griffith, 2011; Mayr, 2015; Myers, 2005; Roberts et al., 2009). In addition, Othman and Mia (2008) observed that construction organisations have come to realise that they are part of a greater social system, and as a result, engaging in the activities that enhance the system for their businesses to prosper, and to add credence to the otherwise poor reputation of the construction industry in the public perception (Barthorpe, 2010). In spite of the increasing research interests related to CSR in the construction industry, their coverage of the issues pertaining to CSR in the construction industry are isolated and less comprehensive. These studies did not take the stock of current happenings in the field, thereby unable to stimulate inspirations for increased CSR development in the construction industry. Therefore, CSR in the construction industry remains unconceptualized (Loosemore and Lim, 2017a). In addition, although the nexus between CSR and sustainable development has been widely recognized, no research has shown how both concepts interact in the construction industry context. The evidence to this nexus is only widely acknowledged in the broader field of management (Behringer and Szegedi, 2016; Herrmann, 2004; Kolk and Van Tulder, 2010).

Therefore, this study was aimed to provide a systematic review of the aggregate of all existing CSR research in construction industry to reveal and conceptualise the state of art of CSR in the construction industry, and to also provide insights on the link between CSR and sustainable development in the construction industry context. This aim is close to that of Lin et al. (2017) who explores the CSR research in the general management field to speculate future research direction for CSR in the construction industry. However, unlike this study, very limited insights are incorporated from the construction field as only 4% of the papers used in their study are published in construction related journals. In addition, no method of analysis was employed, thereby reducing the scientific rigour in their study. The research findings of this study will add new knowledge to the current understanding of CSR

in the construction industry. They will also help different stakeholders in the construction industry such as owners and managers in large and small construction organisations, professional consultants, and government agencies to contribute to achieving the sustainable development goals (SDGs).

2. Definition of CSR and its nexus to sustainable development

The concept of CSR is multidimensional, nebulous and prone to variable interpretations across different contexts (Liyanae et al., 2016). As a result, the popular position in the literature is that CSR lacks an acceptable definition, despite its emergence long time ago in the 1950s and the 1960s (Ness, 1992). Liyanae et al. (2016) stated that most existing definitions refer to the importance of CSR in smartening the identity and image of business organisations. However an analysis of 37 definitions of CSR from 27 authors covering a time span from 1980 to 2003 revealed that the definition of CSR encompasses stakeholder, social, economic, voluntariness and environmental dimensions, and it was concluded that defining CSR is not actually so much of a challenge as widely perceived (Burke and Logsdon, 1996). Cadbury (2006) prescribed a comprehensive way of defining CSR, which is that the existence of business organisations is based on the implied agreement between business and the society. Liyanae et al. (2016) further explained, based on the social contract theory, that the practice of CSR within a business organisation is a form of expectation whereby the society expects such business organisation to operate in a particular way and that by signing up to an agreement or a contract, business organisations are not expected to chase after immediate profit goals at the expense of the long term interests of the society (Cadbury, 2006). Rather CSR covers such positive attributes as honouring obligations to employees in workplaces through health and safety, wages and salaries, work opportunities and the working environment, as well as the meeting of obligations outside the firm, by way of sponsorship, commitment to local communities, attention to environmental issues; and operational and marketing practices (Moir, 2001; Ness, 1992).

The CSR lexicon is often in reference to sustainable development. This notion is often echoed when scholars try to define either concepts, and the contention is whether CSR and sustainable development have the same meaning, and if they are different, to what extent? For instance, in defining sustainable development, Ebner and Baumgartner (2006) argues that the concept is composed of economic, ecological and social issues at the corporate level, and that CSR is the social strand of sustainable development that emphasises stakeholder interests. Equally, many literature agree that CSR contributes to sustainable development (e.g. (Behringer and Szegedi, 2016; Herrmann, 2004; Kolk and Van Tulder, 2010). For instance, in the exploration of the link between both concepts, Moon (2007) explained that the key driver of resource and capability development in business organisations is the natural environment, and by engaging in activities that are environmentally responsible, a business organisation can have more competitive advantage and/or become dominant than competitors who are not. In this regard, the link between environment and economy is severed to ensure the sustainable development of the business organisation (Moon, 2007). Similarly, Oginni and Omojowo (2016) reveals that the society and stakeholder community is increasingly aware of the social costs and risks of businesses. Consequently, many business organisations are reconfiguring their business models to a more socially responsible ones, which are more attractive to society and stakeholder community (Oginni and Omojowo, 2016). By doing so, they gain competitive advantage that elongates their sustenance, or sustainable development.

At the same time, the contributions of CSR to achieving sustainable development is a topical issue at the global scene. According to Behringer and Szegedi (2016), it is a core issue of discussion in the United Nations conferences since the end of the year 2000. Additionally, CSR is very relevant to achieving the sustainable development goals (SDGs). Of note, the SDGs are the recent efforts of the United Nations (UN) to strengthen global peace and eradicate poverty in all its forms and dimensions towards achieving sustainable development for the people, planet and for prosperity (Nam, 2015). The SDGs comprise 17 goals and 169 targets that entail a broad range of sustainable development issues including poverty, women, water, economy, infrastructure, inequality, habitation and climate (Ede et al., 2016). Others issues are consumption, health, food, energy, ecosystems, sustainability, institutions, inequality, habitation and marine bodies. For instance, implementing CSR practices on women's health in the workplace is a way to achieve the SDG about women (Wofford et al., 2016), while the use of CSR reporting frameworks such as the Global Reporting Initiative (GRI) provides explicit guidelines for achieving SDGs, especially the promotion of inclusive and peaceful societies for sustainable development (W Travis Selmier and Newenham-Kahindi, 2017). Conversely, according to Schönherr et al. (2017), the SDGs are beneficial to the implementation of CSR. Firstly, the SDGs are a set of universally agreed-upon sustainable development issues, many of which are split into targets that are directly relevant to social responsibility in business. Secondly, the SDGs provide a set of common goals that allow multiple sets of stakeholders to build partnerships to jointly address sustainable development issues beyond an individual capacity. Thirdly, the SDGs provide a framework against which business operators can map and evaluate their CSR performances.

The above accounts suggest that there is a nexus between CSR and sustainable development. The nexus points to the contributions of CSR to sustainable development, and vice versa. However, the existing evidences point mainly to the field of management. Meanwhile, the construction industry is different from industries in other fields. For instance, by materialising the built environment and at the same time having adverse effect on the environment, no other industry offers as much paradox as the construction industry (Wang et al., 2016). Furthermore, CSR is more complex in the construction industry because of its transitional and project-based nature (Evangelinos et al., 2016). As a result, CSR activities are more place-based, dynamic and flexible than other industries (Loosemore and Lim, 2017b). With these differences, CSR in the construction industry may be different to other industries. Equally, it remains to be seen how this nexus plays out in the construction industry field. Therefore, as part of the aim, this study will explore links between CSR and sustainable development in the construction industry context. Specifically, this study will try to provide insights on CSR contributions to the SDGs and vice versa in the construction industry. This will serve as a contrasting lens between CSR in construction and other industries.

3. Research methods

The aim of this study is to provide a systematic review to reveal and conceptualise the state of art of CSR in the construction industry in two steps. The first step is systematic search for relevant papers on CSR in the construction industry, which are to be used for the main analysis (Seuring and Muller, 2008). To reveal the quality of the papers to be selected, a preliminary analysis using descriptive methods such as frequency, percentage and use of figures will be carried out. The second step is the main data analysis, which comprises both inductive and deductive content analysis of the papers to be selected in order to identify and describe the

important phenomena contained in them (Downe-Wamboldt, 1992; Elo and Kyngäs, 2008). According to Elo and Kyngäs (2008), content analysis helps to attain a condensed and broad description of a phenomenon, the outcome of which are concepts and categories describing the phenomenon.

3.1. Selection of papers

The selection of papers follow three search criteria. The first search criterion is selecting journal papers only. The reason is that journal papers undergo more rigorous review and publication processes that makes them more scientifically valid than, for instance, conference papers (Olanipekun et al., 2017a). In addition, by focusing only on journals, the selected papers can be analysed using similar constructs in terms of application of research objectives and methodologies (Mok et al., 2015). The second search criterion is one of scoping the search for papers to a time span of year 2000 to year 2017. This scope was used because CSR started gaining prominence in the construction industry in the year 2000 (Ekung et al., 2014). The third search criterion is the use of keywords for the search for papers. According to (Gupta and Lehal, 2011), keywords describe the germane points of a text in a manner which can be used for retrieval of information. The keywords that are commonly used to describe the concept of CSR in the construction industry are selected. They used in combination with appropriate Boolean operators as a search rule as follows: (“corporate social responsibility” OR “corporate social performance” OR “corporate environmental responsibility” OR “sustainable responsibility”) AND (“construction management” OR “construction project management” OR “construction industry” OR “construction organisations” OR “construction organisations” OR “construction firms”). This search was executed in the Scopus academic database, which according to Sartor et al. (2016), is very effective for facilitating the conducting of a systematic literature search, while papers from other lesser databases such as Emerald, Taylor and Francis and Elsevier can be sourced from the database (Morioka and de Carvalho, 2016). The search rule was executed under the “article title/abstract/keywords” field of Scopus, and with the document type of “article or review”. Furthermore, given that many leading journals in the construction field can be found in the Google Scholar database (Xiong et al., 2015), the search rule was also executed in this database to include the papers which many not have been in the Scopus database.

3.2. Inductive content analysis

Following the selection of papers, the indicative content analysis method is used to analyse them to identify the themes of research in the field. According to Elo and Kyngäs (2008), this method is useful where there is lack of formal knowledge about the subject (or aim) of study. The process involves developing conclusions from obtained data by weaving together new information into theories/concepts (Bengtsson, 2016). The researcher involved analyses the text with an open mind to identify meaningful subjects that corresponds to the aim of study, while the data obtained are presented

in words and themes to enable the drawing of conclusions (Bengtsson, 2016). Consequently, the four step approach of Bengtsson (2016) to inductive content analysis is employed in this study. In comparison to other methods, the merit and the reason for using Bengtsson (2016)'s approach to inductive content analysis is that it is more recent. As illustrated in Table 1, the approach is explained as follows:

3.2.1. De-contextualisation

This is reading through the selected papers, on two occasions, to obtain a sense of the contents, and to identify the meaning units that provides an indication of the themes that may emerge. The aim of study in the selected papers was used as the meaning unit, as it provides the best constellation of the ideas conveyed in a research. Where there is limited clue from the aim of study, the aim is read and interpreted together with the title, abstract, discussion of findings and conclusion to derive the meaning unit.

3.2.2. Re-contextualisation

This involves the condensation of the meaning units by coding them. In this study, the first alphabet contained in the keyword terminology or phrase in the meaning unit, for instance “P for performance” is used as coding scheme. Thereafter, a list of coded meaning units is drawn, and cross-referenced with the aim of study in selected papers for comparison.

3.2.3. Categorisation and compilation

This is the sorting of alphabetically similar and related codes together to form the categories and/or themes. In addition, the cognizance of papers overlapping two coding schemes was taken and resolved. For instance, from face evaluation, Lichtenstein et al., 2013 appears to convey a meaning unit that indicates “an art of implementing CSR practices”, and therefore initially coded as “I”. However, by reading the aim of study together with abstract and conclusion in the paper indicates a meaning unit identifying “types of CSR practices”, and eventually coded “PR”. Furthermore, compilation was carried out by taking the stock of the sorted categories/themes and naming them.

Eventually, four research themes are identified, namely: (1) perception of CSR, (2) dimensions of CSR, (3) Implementation of CSR, and (4) the performance of CSR. The number of papers under each theme are 10, 25, 19 and 14 respectively.

3.3. Deductive content analysis

In addition to the inductive content analysis of all the selected papers, the deductive content analysis of the 25 papers identified under the “CSR dimensions” research theme was carried out, thereby conforming to methodological triangulation (Carter et al., 2014). The reason for segregating and focusing on the 25 papers is that they contain the existing CSR practices in the construction industry. Therefore, the deductive content analysis is to determine the dominant dimension of CSR practices in the construction industry. Deductive content analysis relies on pre-existing structure, concepts or theories for analysis (Elo and Kyngäs, 2008). In this

Table 1
Illustration of the inductive content analysis process.

Decontextualisation	Re-contextualisation	Categorisation	Compilation
[(Xiong et al., 2016)]: Aimed at determining the corporate social performance – corporate financial performance nexus (CSP-CFP). Here, the meaning unit is performance related	The meaning unit is performance related, thus it is coded “P for performance”	The paper is sorted together with others conveying the “P for performance” code to form the themes	The paper is compiled under the generic theme named “the performance of CSR”

study, the social, environmental and economic dimensions of CSR (Dahlsrud, 2008) are used as the constrained concepts (or categorisation matrix) of CSR in the construction industry. In order to deduce the dominant CSR dimension, each CSR dimension reported in a paper is identified separately, including where multiple CSR dimensions are reported (Saunders et al., 2016). Thereafter, the selected papers are organised into the dimensions of CSR. For instance, Loosemore (2016) explores social procurement in construction project delivery, and is listed under the social dimension of CSR. In contrast, Tsai et al. (2014) focuses on developing a decision model for managing the cost of carbon emissions from green building projects, and therefore, listed under the environmental dimension of CSR. Finally, the frequency of each of the dimensions of CSR was calculated to determine the dominant one in construction industry (Bengtsson, 2016).

3.4. Trustworthiness of content analysis process

The quality of research based on content analysis is often judged by the trustworthiness in the process, which corresponds to validity, reliability and generalizability in quantitative research (Bengtsson, 2016). Demonstrating trustworthiness in qualitative research is often subjective, however, the structured and systematic selection of papers in this study contributes to the objectivity in the process (Seuring and Müller, 2008). Furthermore, the content analysis process was transparently dissected in Table 1 to demonstrate the link between data and results (Elo and Kyngäs, 2008). Therefore the findings obtained are reliable, while the process followed can be repeated in future.

4. Results

This section comprises the results of the analysis carried out. Similar to the arrangement of the methodology, the first part is the result of the selected papers. This part includes the results of the descriptive analysis of the selected papers. The second part is the result of the main analysis comprising both the inductive and deductive content analyses results.

4.1. Description across the time, geography and main journals

Following the execution of the search rule in both the Scopus and Google scholar databases, a total of 68 journal papers were selected. 58 of them were retrieved from the former, and 13 from the latter. Therefore, the body of literature used in this study comprises of 68 journal papers. Since CSR began gaining prominence in the construction industry in the year 2000 (Ekung et al., 2014; Murray and Dainty, 2008), the first journal paper was not published until the year 2005 as shown in Fig. 1. Over a period of 13

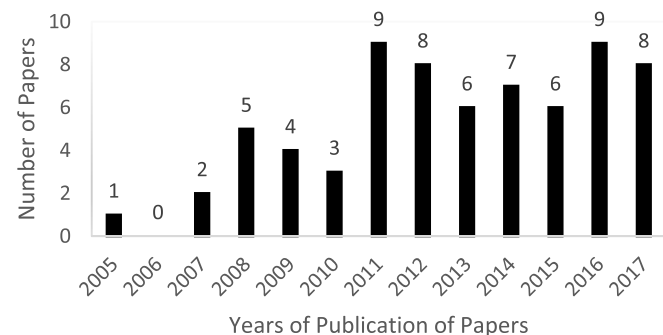


Fig. 1. Distribution of papers in years.

years (2005–2017), the average number of papers published annually in the first half is 2.5, while in the second half, it is 7.6. It is clear that the average annual number of papers published has increased since the beginning of the second half in 2011, which shows an increasing research interests in this area.

The selected journal papers are covered in 35 different journals which can be broadly categorised into construction related, sustainability related and business related journals, indicating that the subject of CSR in construction industry is widely acceptable. The highest number of papers are published in construction related journals (63.24%), followed by the sustainability related (22.06%) and business related (14.71%) journals. Of the construction related journals, *Construction Management and Economics*, and *Property Investment and Finance* are dominant with 12 and 7 papers respectively. As for the sustainability related journals, the *Journal of Cleaner Production* is dominant with 8 papers, while the rest of the journals in this category have one paper each. Equally, the business related journals have one paper each.

Regarding the geographical distribution of papers, which is based on the locations where the data used in the papers are sourced (Sartor et al., 2016), 21 countries covering all the continents of the world are identified. The UK (19) and China (10) have the highest number of papers, followed by Australia (9), USA (4), South Korea (4) and others (2 and below). 63 journal papers sourced their data from a single country, while three papers sourced their data from two countries at the same time (i.e. UK and Turkey, and Australia and New Zealand). One paper contains a conceptual study of the transitions of CSR research perspectives and focuses in the construction industry, and therefore neither was data sourced from any geographical location nor analysed (Lin et al., 2017). The last paper does not have a specific data source, as it uses secondary data of CSR disclosures in construction organisations in many countries.

4.2. Research themes

This is the second part of the result. It comprises the description of the identified research themes in the inductive analysis process. The process is contained in section 3.2 and the research themes are: (1) CSR perception, (2) CSR dimensions, (3) CSR implementation, and (4) CSR performance. In addition, the research theme (2) was further analysed with a deductive content analysis method (see section 3.3). The result is also presented in this section.

4.2.1. CSR perception

The perception of CSR provides an indication of the understanding and awareness of the concept in the construction industry. The notable perception of CSR is that it helps to achieve the goal of sustainability. For instance, Myers (2005)'s review of construction companies' attitude to sustainability in the UK characterised CSR as means of evaluating a company's progress towards sustainability. In addition, Roberts and Kimmet (2009) stated that the expression of CSR in the built environment will most likely evoke, and lead to more sustainable products in his study of the similarities and differences in the jargon used to describe future-focused commercial building product. Nevertheless, Roberts and Kimmet (2009) reiterated that a building product can be environmentally friendly by incorporation of green building features, but not socially responsible, for instance, when the expected gains are not about increasing community awareness and understanding about sustainable development (Roberts and Kimmet, 2009). Furthermore, CSR is seen as an ambiguous terminology, and as a result, it is used interchangeably with similar, but different terminologies such as socially responsible investing (SRI), socially responsible property investing (SRPI) and corporate governance (CG) as found among property companies in the UK (Roberts et al., 2007). Yam Lee Hong

et al., 2008 also reveals that property developers in Malaysia are divided on the meaning of CSR, as some see the concept as conducting businesses as stipulated by the law while others opine that CSR is going beyond the stipulations of the law in the conduct of businesses. The effect of these is lack of common definition of CSR which reduces the understanding of true CSR activities in the construction industry (Roberts et al., 2007).

Many factors account for the different perceptions of CSR in the construction industry. The compound one is the extensive diversity in the industry, mainly in terms of its associated processes and related disciplines (Myers, 2005). For instance, Zhao et al. (2016) reveals that different construction organisations in the Chinese construction industry have different expectations of CSR, and therefore their perception of CSR issues such as resource conservation is significantly different. Similarly, comparing Chinese international contractors and those in the Western countries, the gap analysis of Wu et al. (2015) reveals that the former perceive CSR very narrowly than the latter, with little consideration for CSR issues such as occupational health and safety (OHS) that are less profiting. Furthermore, the level of knowledge and expertise do account for their perception of CSR in the construction industry as revealed by Wang et al. (2014) that, construction professionals who have more knowledge and expertise in socially responsible issues such as use of resource efficient materials perceive CSR more favourably than end users who have limited knowledge of the concept in the UK construction industry. Another factor is organisational size, whereby those large organisations with enormous resources favour CSR more than the smaller organisations (Myers, 2005), while in similar manner, Gliedt and Hoicka (2015) found that CSR issues is more acceptable in large projects than small ones.

Clearly, these studies signify an incoherent and a non-uniform perception of CSR in the construction industry. Although it seems detrimental, still, it echoes the need to incorporate all the divergent perceptions in the formulation and definition of the construction industry CSR (Lin et al., 2017; Roberts et al., 2007).

4.2.2. CSR dimensions

The deductive content analysis reveals that CSR practices - which reflect the ways through which CSR is executed in the

construction industry, is categorised into social, environmental and economic dimensions.

4.2.2.1. Social dimension. The social dimension of CSR is the obligation to make choices and take actions that contributes to the welfare and interests of the society and those in the organisation where businesses are conducted (Uddin et al., 2008). Table 2 shows that majority of the papers (18) identify the social dimension of CSR. This suggests that this dimension of CSR is the dominant in the construction industry. The social dimension of CSR incorporates practices in the areas of public health, public controversies, skills and education, social justice, workplace safety, working conditions, human/labour rights and equal opportunity in the construction industry (Jamali et al., 2006). Especially, the health related issues are increasingly emphasised as CSR of construction companies to their employees who are often exposed to unsafe and risky construction activities (Barnes and Croker, 2013; Bowen et al., 2014; Sherratt, 2018).

Meanwhile, some new CSR practices under the social dimension, including social procurement, social enterprise, community consulting, corporate volunteering and indigenous reconciliation are being propagated in the construction industry. Social procurement emphasises on procuring products and services to leverage increased social benefits and value in the local communities where construction projects are sited (Loosemore, 2016). Similarly, social enterprise is the purposeful direction of the activities and profits of a construction organisation towards uplifting the disadvantaged in the society, while also tackling environmental issues (Loosemore, 2015). Community consulting depicts the engagement of the construction professional who leads a project delivery with the host community members, to hear their concerns and aspirations, while also educating them about project decisions (Close and Loosemore, 2014). According to Close and Loosemore (2014), community consultation is borne of the increased desire of the members of the public to be involved in construction projects which they deem as having impact on their lives. For corporate volunteering, it is any form of support granted by construction industry employers to their employees to volunteer to partake and support community goals (Loosemore and

Table 2
Summary of the CSR dimensions.

SN	Reference sources	Social	Environmental	Economic	New CSR practices
1	Jiang and Wong (2016)	✓	✓		
2	Loosemore (2016)	✓			Social procurement Social enterprise
3	Loosemore (2015)	✓			
4	Bevan and Yung (2015)	✓		✓	
5	Pillania et al. (2014)	✓			
6	Lichtenstein et al. (2013)	✓			
7	Barnes and Croker (2013)	✓	✓		
8	Arruda et al. (2013)			✓	
9	Zhu et al. (2011)		✓		
10	Morton et al. (2011)	✓			
11	Othman (2009)	✓	✓	✓	
12	Roberts and Kriese (2009)	✓	✓		
13	Glass and Dainty (2011)				
14	Close and Loosemore (2014)	✓			Community consulting
15	Othman and Mia (2008)	✓			
16	Tsai et al. (2014)		✓		
17	Bowen et al. (2014)	✓			
18	Boyle and McGuirk (2012)	✓	✓	✓	
19	Yam (2013)	✓	✓		
20	Shen et al. (2010)			✓	
21	Rapson et al. (2007)		✓		
22	Sherratt (2018)	✓			
23	Loosemore and Bridgeman (2017)	✓			Corporate volunteering
24	Huang et al. (2017)		✓		
25	Heard et al. (2017)	✓			Indigenous reconciliation
	Frequency	18	10	5	

Bridgeman, 2017). While indigenous reconciliation is the attempt to use construction activities through infrastructure provision to bring together conflicting communities, one of which is perceived as victim of a suppressive action of the other (Heard et al., 2017). Notably, this type of CSR practice is limited to few countries such as Australia in the world.

It could be seen that the new CSR practices emphasise on the community impact on the process of construction procurement. Yet, in addition to their newness, these CSR practices are improperly understood, less popular and practiced to a very limited extent in the construction industry due to some barriers. One is the inflexibility of the traditional procurement practices in the construction industry, for instance, the large work packages and excessive tender compliance burdens, which prevents social enterprises to thrive, and thereby leading to zero community impact in the industry (Loosemore, 2015, 2016). According to Close and Loosemore (2014), another barrier is the enormous cost and time requirements for implementing these CSR practices, especially to carryout community consultation before embarking on project delivery, or a corporate volunteering activity during a period of tight project delivery schedules (Loosemore and Bridgeman, 2017). Meanwhile, to carry out some of these CSR practices such as community engagement require specialised skillsets which are lacking among construction professionals (Close and Loosemore, 2014). For instance, Heard et al. (2017) reveals that indigenous reconciliation process requires leadership skills, together with the ability to form relationships and build a culture of respect, while being able to identify opportunities in order to ensure success.

4.2.2.2. Environmental dimension. According to Jamali et al. (2006), the environmental dimension of CSR focuses on the impact of a business activity in an organisation on both living and non-living natural systems in the environment, including ecosystems, land, air and water. Table 2 shows that 10 papers identify the environmental dimension of CSR as dominant in the construction industry, less than the social dimension. For instance, Yam Lee Hong et al. (2008) reveals that more of philanthropic and human resources initiatives are more prioritised than environmental options by property developers in Malaysia. However, it is often the case that both environmental and social dimensions of CSR have the same level of dominance when implemented (e.g. (Barnes and Croker, 2013; Roberts and Kriese, 2009)). For instance, Jiang and Wong (2016) reveals that both environmental protection and construction quality and safety are the main CSR dimensions embedded into construction processes in China. Therefore both the environmental and social dimensions of CSR may be interrelated, or accentuating one another in the construction industry context. Overall, the environmental dimension of CSR incorporates practices such as environmental protection (Jiang and Wong, 2016), reducing pollution and waste (Barnes and Croker, 2013), use of resource efficient materials (Zhu et al., 2011), management of carbon emissions (Tsai et al., 2014), and sustainable design and construction (Boyle and McGuirk, 2012; Huang et al., 2017).

4.2.2.3. Economic dimension. The economic dimension refers to the considerations given to both direct and indirect economic impacts that an organisation's operations have on the immediate community and stakeholders (Uddin et al., 2008). For instance, it is only economically responsible for a business organisation to produce goods and services to the society at reasonable price, while also making profit in the process (Nochai and Nochai, 2014). As shown in Table 2, only 5 papers identify the economic dimension of CSR, thereby signifying that it is the least dominant dimension of CSR in the construction industry. Normally, the expectation/assumption is that every business organisation practice the economic dimension

of CSR in order to survive by embedding it into other dimensions of CSR (Seuring and Müller, 2008). This pattern is reflected in the construction industry, whereby for instance, training and development opportunities are provided for employees in construction organisations to enhance their skills and job satisfaction as form of social responsibility, but also that the employees can utilise their new skills to increase profits and shareholder dividends (Arruda et al., 2013). Furthermore, it is found that some project delivery activities such as project feasibility study reflect more economic dimension than other dimensions of CSR in the construction industry (Shen et al., 2010). Therefore by implementing such activity, the economic dimension of CSR is demonstrated. In sum, while the economic dimension of CSR may be implemented by embedding it into other dimensions, the implementation of some project delivery activities demonstrate an economic dimension of CSR in the construction industry.

4.2.3. CSR implementation

The implementation of CSR practices is not a straight forward action, but one that requires a careful strategy in order to ensure successful implementation. According to Cambra-Fierro et al. (2013), construction organisations need to understand their customers better and their social responsibility concerns (market orientation) as part of the strategy for implementing CSR practices. As demonstrated in the Spanish construction industry context, Cambra-Fierro et al. (2013) further distinguishes between the proactive construction organisations that are able to diagnose current customer needs and expectations while also anticipating future trends, and those that are reactive by analysing customer needs and preferences only when there is demand or profit potential. Corroborating the latter point, Loosemore and Lim (2017b) found that CSR in construction organisations is largely informal, non-strategic, unsophisticated and narrowly focussed. However since the study is limited to construction organisations in Australia and NZ, it fails to capture the different strategies for implementing CSR in the construction industry elsewhere.

One common strategy is for construction companies to embed CSR as a part of organisational vision, mission or policy (Othman and Abdellatif, 2011). In this manner, CSR becomes an integral part, rather than an addendum, to company operations (Evangelinos et al., 2016). Moreover, this strategy provides a platform for effective management of CSR (Mayr, 2015), especially to control the compliance of employees and supply chain partners (Griffith, 2011). The extension to this strategy is by establishing a corporate governance structure that creates a portfolio of social responsibility with the responsibility to ensure that the CSR policy of a construction organisation is better perceived in the communities (Petrovic-Lazarevic, 2008). According to Petrovic-Lazarevic (2010), this strategy can be perfected by allowing the members of the community and supply chain partners to participate in the corporate governance of construction companies. Similarly, CSR can be incorporated as part of the contract conditions to be executed in a project delivery (Griffith, 2011). This is demonstrated among UK contractors whereby they opine that bespoke CSR clauses should be incorporated into individual projects in order to meet the needs of local community where projects are sited and the society at large (Eadie and Rafferty, 2014). Further advantage of this strategy is that the contractors can commit the same level of seriousness to achieving project goals to CSR.

Another strategy is the use of CSR standards, which is often interchangeably regarded as sustainability standards. While the primary use of a CSR standard is for disclosing and accounting for social activities (Lu et al., 2015), the contents form a *shopping list* of guidelines that construction organisations rely on for implementing CSR (Upstill-Goddard et al., 2016). Therefore by relying on the

guidelines in a CSR standards, a construction organisation may not need to develop an explicit CSR priorities/practices of its own. In similar manner, management systems such as the environmental management system (EMS) are adopted as guidelines to ensure environmental responsibility in construction companies (Petrovic-Lazarevic, 2008). Since there are multiple management systems addressing different aspects of CSR, integrating their features to form a holistic integrated management system (IMS) leads to superior CSR in the construction companies (Griffith, 2011).

In contrast, international construction companies often adopt the national guidelines such as the UK strategy for sustainable construction (Lou et al., 2012) to guide the implementation of CSR when they are engaged in project delivery in host countries. Normally, many international construction companies would have CSR strategy in place in their home countries. However, owing to institutional distance between head office in their home countries and site office in the host countries, Tan-Mullins and Mohan (2013) demonstrated that a different strategy that is rooted in compliance to existing national regulation in the host country is necessary for successful implementation of CSR. According to Ekung et al. (2014), the role of the government in host countries is critical in this regard to ensure that international construction companies behave in a socially responsible manner in the conduct of construction business. Similar to the role of the government, construction organisations do abide by the dictates of organised and legally backed social agents such as organised NGOs or agitated community groups in their conduct of construction business both locally and internationally (Tan-Mullins and Mohan, 2013). As demonstrated by Guo (2012), this approach is necessary where the influence of the government is weak.

Partnership is another strategy for implementing CSR in the construction industry. Under this strategy, different construction professionals team together using their skills and expertise to deliver one or more social gains such as provision of affordable housing for the less privileged in the community (Othman and Abdellatif, 2011). This strategy has the advantage of multidisciplinary input, thereby helping to overcome the problems of fragmentation and adversarial working relationships that often reduce the implementation of CSR to ad hoc basis in the construction industry (Barthorpe, 2010). According to Haigh and Sutton (2012), another form of partnership is that which extends beyond the construction industry, such as between construction companies and international humanitarian organisations and/or the government to provide services such as post-disaster reconstruction. Under this arrangement, the external partners contribute to increasing the capacity of those in the construction industry for social contribution in the process of delivering one or more social responsibility goals (Haigh and Sutton, 2012). Hence, for both partners in and outside of the construction industry, it is a win-win situation.

Of note, studies such as Loosemore and Lim (2017b) argue that only the large construction organisations do invest in CSR, but this is not the case as SME do engage in CSR practices in the construction industry (see Lou et al., 2012; Upstill-Goddard et al., 2016). However, some differences exist in the strategies they use for implementing CSR. In contrast to the large construction companies, the SME do not use CSR standards as guide for CSR implementation (Mayr, 2015). Instead, the owner-managers in SME dictate the CSR priorities, which is another area of contradiction to the large construction companies who can rely on the board of corporate governance structure to determine CSR priorities (Petrovic-Lazarevic, 2008). Furthermore, due to resource constraints, the SME would not create a separate portfolio or department to handle CSR issues (Mayr, 2015).

4.2.4. CSR performance

Following the implementation of CSR through different strategies, the focus automatically shifts to the impact of CSR in the construction industry. By impact, it means the influence of CSR on different areas of performance in construction companies. As demonstrated in many studies (e.g. Huang and Lien, 2012; Liu et al., 2011; Pivo and Group, 2008), CSR is very impactful on the non-economic performance areas in construction organisations, for instance, on corporate image. Loosemore and Lim (2017a) also reveal the relational impact of CSR in terms of appeasing host communities who may be in opposition to proposed projects and also building loyalty and engagement from employees and customers. Therefore, implementing CSR to enhance the non-economic performances in construction companies appears to be the norm in the construction industry. However, the economic impact of CSR in the construction industry is inconsistent, and this is often blamed on the differences in contexts such as location, company size and scope of business (Loosemore and Lim, 2017a). In some instances, CSR has been found to lead to increase in the financial performance in construction companies (Newell and Lin Lee, 2012), and in some cases, a reciprocal relationship between financial performance and environmental responsibility has been observed (Xiong et al., 2016). The latter is an indication of nexus relationship between CSR and economic performance in construction organisations. In contrast, studies such as Loosemore and Lim (2017a) reveals that there is no established relationship between CSR and economic performance in construction companies.

As demonstrated in many studies (e.g. Agwu, 2012; Sardinha et al., 2011), the construction organisations that record little or no impact incorrectly evaluate the economic impact of CSR prior to the point of inflection – which is the early stage when resources are expended to implement one or more CSR practices with little or no benefits realised, thereby translating to decline in organisational resources, especially the financial resources (Wang et al., 2016). Beyond the point of inflection, the implemented CSR practices would have reached maturity, and then the benefits become realised in form of tangible outcomes that are reflected in the financial performance in construction organisations (Wang et al., 2016). Although more research is necessary to confirm the relevance of the point of inflection to the evaluation of the economic impact of CSR, more accuracy is guaranteed if construction organisations evaluate the economic impact of CSR practices mainly beyond the point of inflection.

Furthermore, there is a growing focus on the frameworks for evaluating the impact, or performance of CSR in the construction industry. As many of the international standards such as ISO 26000 do not adequately cover issues pertaining to construction (Lu et al., 2015), construction industry specific CSR evaluation frameworks have been developed (e.g. Zhao et al., 2012). As a result, the guidelines for developing construction industry specific CSR evaluation frameworks are specified. The advantage is that future attempts at developing construction industry specific frameworks can follow these guidelines or improve upon them. First, the indicators for construction industry specific frameworks should capture the interests of multiple stakeholders such as employees, clients, suppliers, and host communities that are impacted by the effects of construction activities (Zhao et al., 2012). Second, a transparent weighting scheme which equitably reflects the interests of different stakeholders should be incorporated into the framework (Liao et al., 2015; Zhao et al., 2012). Third, the frameworks should incorporate both project and organisational levels at which construction businesses operate (Zhao et al., 2012). Finally, the framework should be designed to quantify the amount of economic benefits and societal wellbeing derivable from implemented CSR practices (Lassch and Yang, 2011; Pivo, 2008).

5. Towards a conceptual framework

Four research themes have been identified and described from the systematic review of previous studies on CSR in the construction industry. Meanwhile, both the inductive and deductive content analysis are purposely broad to not only identify the research themes but to reveal how they are linked together precisely, thereby indicating an attempt to conceptualise CSR's state of art in the construction industry. Fig. 2 depicts the CSR's state of art in the construction industry is summarised more concisely as follows.

As illustrated in Fig. 2, there is no uniform perception of CSR in the construction industry, mainly due to the diversity in the associated processes and related disciplines in the industry. Other factors which contribute to the non-uniform perception of CSR are level of knowledge and expertise of construction professionals, socio-cultural environment where construction organisations are located and their size. Despite the lack of uniformity in CSR perception, many construction organisations implement different CSR practices that can be categorised into social, environmental and economic dimensions. Of these, the social dimension CSR is the most dominant in the construction industry. The social dimension

encompasses CSR practices such as education and skill acquisition which are old fashioned, and new forms such as social procurement, social enterprise and indigenous reconciliation. The new forms emphasise on community impact in the process of construction procurement, however, the level of their implementation is still low due to barriers such as inflexibility of the traditional procurement practices, and enormous cost and time requirements. The environmental dimension is also dominant, but to a lesser degree than the social dimension of CSR. Often when both are implemented, they are considered to have the same level of dominance, suggesting the possibility of interrelationship between them. The economic dimension is the least dominant, but the implementation is in two forms. First, by embedding it into the other dimensions, and second, by undertaking project delivery activities such as project feasibility studies which add to economic responsibility in the construction industry.

Furthermore, the implementation of CSR in the construction industry, irrespective of the dimension, involves the application of different strategies to ensure success. The first strategy is by embedding CSR as part of organisational vision, mission or policy, which ensures that CSR is undertaken as part of organisational

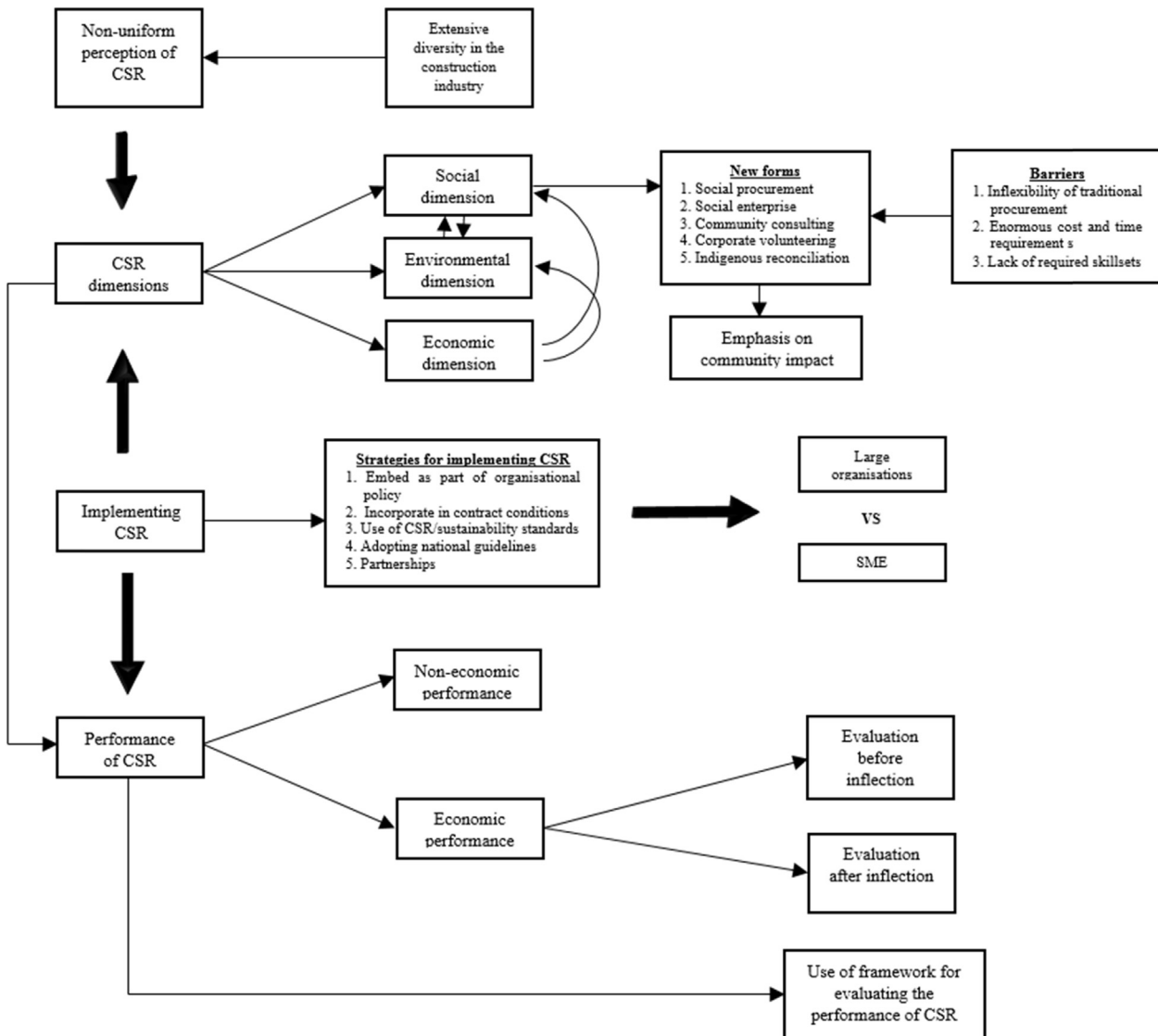


Fig. 2. Illustration of the conceptual framework of CSR's state of art in the construction industry.

operations. Secondly, CSR can be incorporated as part of the conditions to be executed in the project delivery of construction contracts. Thirdly is by using CSR or sustainability standards as guideline for CSR implementation. Fourthly, adherence to the national guidelines for sustainable development or social responsibility. The last one is partnership, which involves pooling together of resources among construction industry stakeholders and/or external parties to deliver social gains. In addition, between the large construction organisations and SME, the strategies employed for implementing CSR is somewhat different. By deploying one or more of the strategies to implement CSR, the impact can be in either non-economic or economic forms in construction organisations. The non-economic impact, for instance, to improve relationships with the host communities where construction projects are sited, is quite sorted and determinable. However, the economic impact was a controversial issue, and the merit of it is often debated among scholars until recently. The accurate means for determining the economic impact of CSR in the construction industry is by taking into consideration the point of inflection during evaluation. The point of inflection represents the early and maturity stage of CSR implementation in construction organisations. Alternatively, the construction industry specific frameworks can be used to evaluate CSR performance in construction organisations. However, such frameworks must capture stakeholder interests, with a transparent weighting scheme, and incorporate project and organisational levels of construction business, and with a mechanism to quantify the benefits that can be derived from CSR.

6. Discussion and insights for enhancing CSR contribution to sustainable development in the construction industry

As revealed earlier, the concept of CSR is often held in nexus with the sustainable development agenda, whereby the implementation of the social, environmental and economic dimensions of CSR are potential contributions to the social, environmental and economic aspects of sustainable development respectively. Equally, there is a nexus that exists between CSR and the SDGs. Therefore, given the review carried out in this study, insights for enhancing CSR contribution to sustainable development and the SDGs in the construction industry, and vice versa are provided below.

6.1. Changing the traditional construction procurement practices

The review reveals that the social dimension is the most dominant of the three dimensions of CSR, and can be regarded as the major aspect where the construction industry is contributing to sustainable development. Nevertheless, the CSR practices under the social dimension especially the new forms such as *social enterprise* are hindered by the traditional approach to construction procurement in the construction industry (e.g. (Loosemore, 2015, 2016)). Therefore, there is need for changes to the traditional construction procurement process to a more socially inclined construction procurement process that adds to construction industry sustainable development. As part of the changes, construction clients need to unbundle their work packages to smaller ones that can be handled by social enterprises (Loosemore, 2016). Alternatively, the procurement of small construction works can be deliberately retained for the social enterprises. However, the support of construction clients, especially the government is key to promote this arrangement. Furthermore, the rhetoric of “*incumbent players*” in the construction supply chain should be downplayed. Instead, “*incumbent players*” who are usually large organisations should support and even nurture social enterprises until they are able to compete and operate in the construction supply chain

(Loosemore, 2015). In this regard, Lin et al. (2017) stress the need for a stakeholder management approach to increase the cooperativeness of different construction stakeholders for increased CSR in the construction industry. This increases the access of the small organisations to participate in the construction value chain thereby contributing to the SDG of building resilient infrastructure and promoting inclusiveness at the same time (Nam, 2015). Additionally, one of the 169 targets under the 17 SDGs is to ensure equal opportunity and reduce inequalities of outcome. Therefore, such cooperativeness leads to the achievement of the SDG by providing equal opportunities and fairness for both the large and small organisations when they partake in construction procurement process without bias and discrimination.

6.2. Legislation for environmental responsibility in the construction industry

CSR in the construction industry should facilitate reducing or eliminating the environmental footprint arising from construction activities. As revealed in many studies, the major factor that promotes environmental responsibility in the construction industry is government legislation (e.g. Barnes and Croker, 2013; Zhu et al., 2011). However, it is observed that government legislations for environmental responsibility in many countries are not directly related to the construction industry. Instead, legislations are enacted for sustainable development and/or environmental protection in other sectors such as agriculture, or different areas of focus such as climate change. The expectation is that such legislations can be adapted to the construction industry context. However, this is not so. In the Australian context, Van der Heijden (2013) revealed that the carbon tax enacted by the government of Australia does not operate directly in the construction sector as it does not mandate construction industry stakeholders to achieve specified results in project delivery. In consequence, the legislation and others alike are not effective at driving sustainable building practices in the Australian construction sector (Olanipekun et al., 2017b). It is thus very important to enact environmental legislations that specifically address the peculiarities of construction project delivery in order to enhance the environmental responsibility in the construction industry. Such legislations should be tailored towards the SDGs. For instance, water is an important material-resource used for construction. Hence, a legislation that promotes efficient use of water during construction directly promotes the SDG to conserve and sustainably use the oceans and marine resources for sustainable development (Nam, 2015). The legislation should adopt the carrot and stick strategy. For instance, incentives for efficient water use for construction and penalties for otherwise. However, this would require the determination of a benchmark for identifying optimum and excess use of resources during construction. The sustainability rating systems such as LEED, BREAM and Green Star can be useful in this regard for benchmarking resource-use during construction.

6.3. Integrating CSR dimensions

The review reveals three dimensions of CSR in the construction industry. However, the three dimensions are seldom implemented together in an integrated manner in the industry (Boyle and McGuirk, 2012). Therefore, the dimensions of CSR are mainly implemented in isolation in the construction industry. It has been shown that CSR contributes to sustainable development through the SDGs (Wofford et al., 2016). However, in the construction industry, leaving out one or more dimensions of CSR cannot help to achieve the level of sustainable development required (Glass and Dainty, 2011). For instance, to emphasise on efficient use of

energy and other resources during the delivery of a mega construction project (environmental dimension) without involving (or accounting to) the local community whose interests are affected by the project (social dimension) may lead to the failure of the project. Such failure causes loss (or waste) of resources utilised on the project, thereby preventing the achievement of the SDGs to conserve both the marine and terrestrial resources. In addition, such failure suggests lack of community inclusiveness in project delivery. This stands in contrast to the SDG that emphasises on the promotion of inclusive societies and accountability for sustainable development (Nam, 2015). A formal approach to integrating the CSR dimensions in the construction industry is suggested. The integrated management system (IMS) can be adopted to combine the three dimensions into one system, and thereby implemented together. With the IMS, the CSR dimensions can be easily managed as one unit, and cheaper for construction organisations. According to Bereznyuk et al. (2016), substantial savings to financial, physical and human resources of an organisation are derived from implementing IMS.

6.4. Increasing CSR implementation in small to medium enterprises (SME)

The largest number of construction organisations are small to medium enterprises (SME) (Barthorpe, 2010; Bevan and Yung, 2015), accounting for 98% of construction organisations in the Australia (Hosseini et al., 2016) and 80% of construction output in the UK (Barthorpe, 2010). Therefore in the conduct of construction business, they have high impact to increase social responsibility (Upstill-Goddard et al., 2016). However, although there are evidences to support the implementation of CSR in SME in the construction industry (e.g. (Lou et al., 2012)), the level of implementation is still very low. In the UK context, Barthorpe (2010) observed that many SME have no compunction to embed or formalise CSR into their mainstream business activities. Often, the SME engage in CSR as occasional partners to the larger construction organisations in the construction supply chain. This suggests that the SME are not equally placed like the larger organisations in the practice of CSR. Meanwhile, a key rhetoric of the SDGs is to eliminate global inequalities in terms of resource consumption and participation in social engagements and decision making. However, this is not so for the SME in the construction industry in terms of CSR practices. Therefore, there is a need to increase the level of social responsibility in the SME in the construction industry. This will eliminate inequalities in the CSR practice in the construction industry, and thereby promoting the achievement of the SDGs. To increase the level of CSR in the SME, the owner-managers in the SME can incorporate the SDGs in their businesses. Schönherr et al. (2017) stated that the SDGs are directly relevant to social responsibility in business. Appropriate motivation should be provided to the SME to increase CSR practices. The large construction organisations have enormous responsibility in this regard to support, mentor and provide resources for the SME to increase their level of CSR (Loosemore, 2016).

7. Conclusion, implications and further research

The aim of this study was to provide a systematic review of CSR research to reveal and conceptualise CSR's state of art in the construction industry. The findings reveal four research themes in the construction industry, i.e. CSR perception, CSR dimensions, CSR implementation and the CSR performance. Owing to extensive diversity in the construction industry in terms of its associated processes and related disciplines, CSR is literarily perceived as an ambiguous terminology that is lacking in common definition in the

industry. Nevertheless, CSR is still viewed to help to achieve the goal of sustainability in the industry. The CSR dimensions reveal the common CSR practices, thereby enabling the identification of dominant CSR dimensions in the construction industry. Of the social, environmental and economic dimensions of CSR, the social dimension is the most dominant in the construction industry, followed by the environmental and economic dimensions. The social dimension encompasses CSR practices such as education and skill acquisition which are old fashioned, and new forms such as social procurement, social enterprise and indigenous reconciliation. CSR implementation reveals the specific strategies for ensuring successful implementation of CSR. These include: embedding CSR as part of organisational vision, mission or policy, incorporating CSR as part of the conditions to be executed in the project delivery of construction contracts, employing CSR or sustainability standards as guideline for CSR implementation, adherence to the national guidelines for sustainable development or social responsibility and partnership among construction industry stakeholders and/or external parties to deliver social gains. Lastly, CSR performance indicates the impact of CSR on the performance in construction organisations in both economic and non-economic forms. Furthermore, by exploring the link among the research themes, a framework that conceptualises CSR's state of art in the construction industry is developed to:

1. Identify hindrances to successful CSR in the construction industry such as the barriers which impede the full implementation of the new forms of CSR practices under the social dimension
2. Reveal the best practices underlying the CSR implementation in the construction industry such as the five strategies for implementing CSR
3. Create the avenue to build on the existing knowledge of CSR in the construction industry. The framework is conceptual, and therefore needs to be verified using empirical data.

Given the nexus between CSR, and sustainable development and the SDGs, suggestions for enhancing CSR contribution to sustainable development and the SDGs in the construction industry, and vice versa were provided. They implicate different construction stakeholders. The first suggestion is to make changes to the traditional procurement practices in the industry to encourage social enterprise. The contributions of the project owners is very important in this regard. Instead of awarding large and complex contracts, they need to reduce their projects to smaller packages that can be undertaken by social enterprise organisations. The second suggestion implicates the government, which is to enact legislations that specifically address the peculiarities in construction project delivery such as design-state EIA of construction projects. The third suggestion is for owners and managers in construction organisations to consider implementing all the dimensions of CSR together in an integrated manner. The fourth suggestion is to increase CSR implementation in the SME. This can be done by raising the awareness of owner-managers in construction SME, and demonstrating the practical benefits of CSR to their business.

Some areas of further research are uncovered for the academia and/or the research-minded in the construction industry. The conceptual framework of CSR's state of art in the construction industry should be verified with empirical data. It should also be used as a basis for comparing CSR in the construction industry with other industries. Solutions to the barriers to the new forms of CSR practices under the social dimension should be proposed, while also developing an appropriate methodology for integrating the dimensions of CSR within the framework. The efficacy of strategies for implementing CSR should be further verified using case studies,

and the appropriate strategy for each CSR dimensions should be determined. Furthermore, more investigation is necessary to validate the accuracy of using the point of inflection to evaluate the economic impact of CSR. Overarchingly, subjecting all or parts of the conceptual framework to scientific research, more knowledge for advancing the current level of sustainable development in the construction industry can be gained.

One limitation of this study is that it only focuses on previous studies published in academic journals, while leaving other sources for documenting CSR research, such as organisational repositories and websites, and international repositories such as the Global Reporting Initiative (GRI) websites. However, the systematic selection and analysis of these publications increase the generalizability of findings. Another limitation is that academic journals can have a lead time of about two years before publication. This is capable of rendering the contents of academic journals stale at the time of publication. Nevertheless, this study covers a period of 18 years (Years 2000–2017), which is lengthy enough to reveal the state of the art of CSR in the construction industry.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jclepro.2018.05.157>.

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