

EXAMINING CRITICAL CORPORATE SOCIAL RESPONSIBILITY CHALLENGES IN THE CONSTRUCTION INDUSTRY IN GHANA

Justice Williams^{1*}, Emmanuel Adinyira², Kofi Agyekum³, Frank Fugar⁴ and Fred Simpeh⁵

^{1,5} Department of Construction and Wood Technology, Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development, Kumasi, Ghana

^{2,3,4} Department of Construction Technology and Management, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

*Corresponding author: justicewilliams@aamusted.edu.gh

ABSTRACT

Background: In today's competitive work environment, Corporate Social Responsibility (CSR) is seen as a strategic management tool that provides win-win prospects for the community and the organisation. Unfortunately, this concept seems not to be a priority among construction companies in Ghana.

Research Aim: This study examines the critical challenges preventing construction companies from engaging in CSR in Ghana.

Method: Through a cross-sectional survey, responses were retrieved from construction companies in Ghana. Also, There were 250 contractors that took part in the survey; 155 of them were building contractors and 95 of them were road contractors. To ascertain the underlying characteristics and degree of criticality of the highlighted challenges, two analytical approaches were used: Exploratory Factor Analysis (EFA) and the Fuzzy Synthetic Evaluation (FSE) model.

Results: This study found three challenges preventing Ghanaian contractors from engaging in CSR. Thus, lack of knowledge in relevant CSR implementation, insignificant financial resources and corruption and lack of attachment to the community. The study further reveals a lack of knowledge in relevant CSR implementation as the number one critical challenge preventing Ghanaian contractors from fulfilling their CSR. This study's findings will be relevant to construction stakeholders in realising the challenges associated with practising CSR. This will potentially influence the firms to put in place measures to limit the challenges hindering their CSR implementation. This study contributes to the state-of-the-art by examining the critical underlying challenges preventing construction companies from engaging in CSR in a developing country context.

Keywords: Corporate social responsibility, construction industry, critical CSR challenges, sustainability, Ghana.

This article published © 2025 by the Journal of Science and Technology is licensed under CC BY 4.0



INTRODUCTION

Corporate social responsibility (CSR) is a strategic management strategy that offers win-win opportunities for the organisation and the community in today's cutthroat organisational climate (Mahmud *et al.*, 2020). CSR is changing how organisations deal with their stakeholders and how to be ethical and responsible to the general stakeholders (Naglaa and Wan, 2022). Boateng *et al.* (2020) discovered that companies in Ghana view corporate social responsibility (CSR) as a way to preserve and enhance the quality of the natural environment, as well as a way to give back to the community what has been earned in profits. The authors went on to say that CSR would become the benchmark for evaluating how businesses interact with society and the environment in the future. Thus, Ghanaian construction companies need to take part in socially responsibility initiatives if they want to be globally competitive.

Construction activities bring about significant changes, either positively or negatively, to the environment wherever they occur. In some cases, large construction projects have led to the displacement of local indigenes living in and around the project areas, arising from compulsory land acquisition. Because construction has a negative impact on the environment, it is inherently irresponsible (Lu *et al.*, 2016). According to Zhang *et al.* (2018), the construction sector operates with an inherent lack of responsibility. Hia *et al.* (2018) provided evidence in support of this claim by pointing out that excessive resource and energy use in construction activities results in ecological devastation and physical environmental degradation. Further, construction

activities and built facilities influence various aspects of social well-being such as health, economic, social, ecological and cultural (Zhao *et al.*, 2012). These and many more factors have led to socially conscious community members, clients, and society expecting construction companies to contribute to the environment affected adversely by their operations.

Corporate social responsibility is one of the most important variables that help companies attract investors and better-qualified employees with a lower cost of capital and a higher competitive level (Naglaa and Wan, 2020). Boateng *et al.* (2020) argued that socially conscious clients are avoiding what they perceive as socially irresponsible products from companies that have allegedly not acted in society's best interest in Ghana. A few academic studies have advanced CSR in the Ghanaian construction business, according to some studies (Lichtenstein *et al.*, 2013; Williams *et al.*, 2020). In Africa, there are few studies on corporate social responsibility that are both quantitative and qualitative (Khamis and Ismail, 2021). Khamis and Ismail (2021) came to the conclusion that CSR is rare in poor nations after doing their investigation. Current CSR research, according to Wong *et al.* (2022), ignores the need to comprehend how CSR interacts with local populations. Therefore, the purpose of this study is to determine what significant obstacles to corporate social responsibility Ghanaian construction businesses experience in carrying out their responsibilities in this area. To answer this question, this study seeks to examine the challenges that construction companies in Ghana encounter in fulfilling their CSR obligations

Literature Review

The Term Corporate Social Responsibility

Corporate social responsibility, or CSR, has been used in various contexts by different authors. CSR is a business obligation to generate profit that doesn't degrade, safeguard, or improve societal assets (Kim *et al.*, 2017; Rasoolimanesh *et al.*, 2017; Kim *et al.*, 2018). Additionally, corporate citizenship, corporate governance, corporate accountability, and business ethics can all be used interchangeably with this phrase (Duman *et al.*, 2016; Supanti and Butcher 2019). CSR is an ethical, non-legislative, non-driven approach to promoting responsible conduct within organisations to achieve desired results (Amponsah-Tawiah and Dartey-Baah, 2011). It provides a voluntary framework for companies to absorb broader social or environmental issues and better stakeholder relations (Hu and Gursy, 2015; Qian *et al.*, 2018). Others view CSR as the actions of a company which lead to sustainable development through the company's activities (Lu *et al.*, 2016; Xia *et al.*, 2018). According to Zhang *et al.* (2021), businesses understand that they have a responsibility to account for the effects of their actions on society and the environment in addition to their financial performance. McWilliams and Siegel (2000) offered an intriguing interpretation of corporate social responsibility (CSR), contending that it is an action required by law and aims to further a social benefit outside the company's interests. CSR is essentially about fostering relationships with stakeholders and contributing to society. As such, for construction companies in Ghana and other developing nations to be good corporate citizens, they must

adopt this virtue.

Corporate social responsibility has a long historical tradition. Nonetheless, it is difficult to define because it has a multidimensional and ambiguous meaning that can mean different things in different organisations (Duman *et al.*, 2016; Cowan and Guzman, 2020; Wong *et al.*, 2020). Singh *et al.* (2015) argued that the unclear nature of CSR and pressure on companies to embrace it meant that organisations had to express the term to meet consumer demands. Loosemore and Lim (2017) supported this argument by adding that CSR in the construction industry remains fragmented and not conceptualised. Recent literature reinforcing this assertion argued that the absence of a common concept of CSR makes it challenging to interpret and compare the results from different studies since they usually refer to different industries (Duman *et al.*, 2016; Boateng *et al.*, 2022; Neglaa and Wan 2022).

In all these setbacks, some researchers have defined CSR in their context. Amponsah-Tawiah and Dartey-Baah (2011) see corporate social responsibility as the strategic decision of an organisation to voluntarily act upon the societal factors that can potentially hinder the fulfilment of corporate goals. Twum *et al.* (2022) see corporate social responsibility as context-specific actions and policies that consider the stakeholders. It is a recognised fact in the literature that stakeholders believe companies are responsible for them in some ways (Boadi *et al.*, 2019; Mahmud *et al.*, 2020).

According to the World Bank Sustainable Review (2021), CSR is an organisation's contribution to economic development,

partnering with employees, their families, the local community and society to enhance the quality of their lives in ways that are good for business and growth. This definition concludes everything and creates a practical significance to the debate because the underlying factor of CSR is to bring improvement and relief wherever a construction company finds itself. In this way, companies or corporate entities would always feel welcome in these communities and enjoy a peaceful environment in which to carry out their activities.

Corporate Social Responsibility in Developing Countries

Historically, in many developing nations, the act of CSR is foreign and remains so in some countries (Amponsah-Tawiah and Dartey-Baah, 2011). A recent study by Naglaa and Wan (2022) in the Egyptian construction industry found that CSR studies are limited in Africa. It has also been argued that some communities in developing countries believe that firms engage in CSR for their own interest, using the communities as channels (Amoako and Boateng 2022). Some authors have argued that works on CSR practices have generally concentrated on businesses in more developed economies such as the US, UK, Australia and the like (Tilt, 2016; Bo *et al.*, 2018). However, the situation is changing as researchers begin to act toward awareness of the concept of CSR in developing nations, particularly as these countries are experiencing growth and shifting towards a more capitalist orientation (Suminiani *et al.*, 2007, as cited in Tilt, 2016). In addition, much of the world's population lives in developing countries with specific social, political, and environmental problems (UN

2013, as cited in Tilt, 2016). The foregoing underscores the need for more effort to promote the CSR research agenda in developing countries like Ghana.

Corporate Social Responsibility in Ghana

Initiatives for corporate social responsibility in Ghana are mostly viewed as strategic decisions made by companies to proactively address societal issues, which may work against the attainment of their corporate objectives (Ametepey and Cobbina, 2022; Amponsah-Tawiah and Dartey-Baah, 2011). Oppong (2016) argues that most CSR initiatives, in terms of impact and size of social investments, are done by telecommunication companies, banking institutions, and companies in the extractive industries such as mining, oil and gas, which are subsidiaries of foreign organisations.

In a developing country like Ghana, Western theories on CSR have limitations in their application. This results from variations in the causes or drivers of corporate social responsibility (CSR) between the West and Africa, in addition to cultural and managerial traits (Arthur-Aidoo *et al.*, 2018; Dartey-Baah and Amponsah-Tawiah, 2011). As a result, there is minimal social pressure on governments and businesses to be socially responsible, as is often encouraged in developing societies to prepare comprehensive laws (Dartey-Baah and Amponsah-Tawiah, 2011).

The Need for Corporate Social Responsibility in the Construction Industry

It has recently become a concern for conservationists and policymakers to see the construction industry deal more effectively with its climate (Loosemore and

Lim, 2017). Because there is no CSR in the Ghanaian construction industry and very little academic research has been done, essential questions like the types of corporate social projects and challenges that arise go unanswered (Lichtenstein *et al.*, 2013). The authors further argue that awareness of these issues is important for establishing a corporate social responsibility system capable of providing concrete long-term societal benefits while increasing the performance of companies by leveraging capital and competencies.

The record of corporate social responsibility (CSR) in the construction industry is deemed by Watts *et al.* (2015) to be of growing significance for businesses. According to Zhang and Lim (2020), as businesses' operations put the environment under stress, they should be held responsible for preserving a sustainable climate. Construction projects impose a substantial and inherent requirement on contractors to uphold their corporate duties (Griffith, 2011). Furthermore, the author made the case that these positions have an impact on the financial management strategy, project management procedures, and corporate strategy of construction firms.

CSR is causing a lot of controversy, according to Kim *et al.* (2018), because of the many approaches taken by organizations and the justifications offered for them. Various industries have distinct incentives, objectives, and guiding principles that could affect how CSR is carried out.

Corporate Social Responsibility Challenges in the Construction Industry

In their 2011 critical analysis of corpo-

rate social responsibility (CSR) in the construction sector, Loosemore and Phua uncovered the pervasive rhetoric surrounding "doing the right thing" while, in fact, business tactics were dictated by the "bottom-line." Loosemore and Phua (2011) identified a number of obstacles to successful CSR in the construction industry through a series of case studies of top global companies from all points of the supply chain. These included entrenched work cultures, ambiguity surrounding the definition of CSR, a deficiency of leadership and management abilities, a lack of CSR data, doubts regarding return on investment, resistance from the supply chain, and dubious clients. Loosemore and Phua (2011) noted that there were a number of issues with the expanding body of research on corporate social responsibility in the construction industry. First off, without a thorough grasp of the unique business environment in which it was implemented, it was erroneously selling CSR as a universal answer for all companies. Second, not every company benefited from a highly codified CSR approach. Thirdly, there is insufficient evidence to support the growing number of papers that philosophize uncritically about how construction firms should adopt some form of CSR initiative. These papers focus on how firms should strategically pursue and operationalize CSR to achieve improved performance and a sustained competitive advantage.

The research has demonstrated that the readiness of CSR initiatives in Ghana's construction business may be determined by past financial performance (Lichtenstein *et al.*, 2013). For example, Nkrumah's (2013) study found that Ghanaian SMEs view corporate social re-

sponsibility (CSR) management as only supporting the society. “To my knowledge, CSR is trying to support the community, assisting needy children, those who cannot feed themselves, and paying of school fees of pupils in need,” a participant who was quoted in the report stated about CSR.

Every company approaches CSR concerns differently, according to Ofori and Hinson (2007). The extent to which a corporation responds depends on a number of factors, including its size, industry, corporate culture, stakeholder expectations, and history of progressive corporate social responsibility. To put it simply, a contractor needs a socially conscious organizational plan that arranges

corporate and operational management duties and utilizes them to conduct its business. Thus, the objectives, tenets, guidelines, and vision of corporate social responsibility can be established and included into the regular operations of the business.

The complex and competitive market environment of today presents construction enterprises with obstacles stemming from both non-economic and economic sources (Barde and Tela, 2011). They further contend that in order for construction companies to thrive, they must strategically organize their operations to balance the interests of the legal, social, economic, and other relevant forces.

Table 1. Sumarizes CSR Challenges In The Construction Industry

Ref	Challenges	References
1	Lack of significant CSR implementation benefits	(Zhang <i>et al.</i> , 2018; Liao <i>et al.</i> , 2018; Upstill-Goddard <i>et al.</i> , 2016).
2	Lack of appropriate CSR training and conceptualisation	(Prasad and Kumar 2022; Zhang <i>et al.</i> , 2018; Liao <i>et al.</i> , 2018; Loosemore and Lim, 2017; Zhao <i>et al.</i> , 2016)
3	Lack of capacity and expertise	(Zhang <i>et al.</i> , 2019; Loosemore and Lim, 2017 Loosemore, 2016; Duman <i>et al.</i> , 2016)
4	Lack of sufficient resources to implement CSR	(Zhang <i>et al.</i> , 2019; Liao <i>et al.</i> , 2018 Duman <i>et al.</i> , 2016)
5	Lack of awareness of CSR	(Zhang <i>et al.</i> , 2018; Liao <i>et al.</i> , 2018; Akotia <i>et al.</i> , 2017; Chang <i>et al.</i> , 2016; Liao <i>et al.</i> , 2017)
6	Lack of capacity and expertise	(Zhang <i>et al.</i> , 2019; Elmualim, 2017; Evangelinos <i>et al.</i> , 2016) (Loosemore, 2016; Loosemore and Lim, 2017; Duman <i>et al.</i> , 2016)
7	Lack of knowledge in CSR implementation	Zhang <i>et al.</i> , 2019; Loosemore and Lim, 2017; Lu <i>et al.</i> , 2016; Zhou and Mi, 2017
8	Lack of governmental support	(Zhang <i>et al.</i> , 2018; Liao <i>et al.</i> , 2017; Loosemore and Lim, 2017)

9	Lack of strategic guidance and support from senior leaders or managers within the organisation	(Zhang <i>et al.</i> , 2018; Loosemore and Lim, 2017)
10	The negative attitude within the organisation	(Zhang <i>et al.</i> , 2019; Liao <i>et al.</i> , 2018; Duman <i>et al.</i> , 2016)
11	Lack of cooperation among stakeholders	(Zhang <i>et al.</i> , 2019; Duman <i>et al.</i> , 2016; Xiong <i>et al.</i> , 2016)
12	Unclear stakeholder role and power	(Zhang <i>et al.</i> , 2019; Lin <i>et al.</i> , 2017; Zhou and Mi, 2017)
13	Lack of credibility of the disclosed CSR information	(Kumar, 2019; Zhang <i>et al.</i> , 2019; Lu <i>et al.</i> , 2016)
14	Lack of frameworks to implement CSR	(Zhang <i>et al.</i> , 2019; Zhou and Mi, 2017; Loose more, 2016)
15	Attitudes of society, cultures of the construction industry	(Zhang <i>et al.</i> , 2019; Loosemore and Lim, 2017a Duman <i>et al.</i> , 2016)
16	Consider CSR in a generic sense, not in a specific strategy	(Prasad and Kumar 2022; Kumar, 2019; Zhang <i>et al.</i> , 2019; Akotia <i>et al.</i> , 2017; Lin <i>et al.</i> , 2017; Loosemore and Lim, 2017)
17	Lack of awareness and knowledge of CSR among customers	(Zhang <i>et al.</i> , 2019; Loosemore, 2016)
18	Stakeholder interest conflict	(Zhang <i>et al.</i> , 2019; Loosemore and Lim, 2017)
19	Lack of attachment by construction companies to communities	(Kumar, 2019; Zhang <i>et al.</i> , 2019; Ana and Ferreira, 2019).

METHODOLOGY

For this study, a quantitative research methodology was used. With this method, the researchers were able to quickly collect data based on a larger sample size that is representative of Ghanaian contractors (Creswell, 2013; Babbie, 2010). Additionally, this approach was used to address the issue or topic that this study aims to address, namely, what significant obstacles do Ghanaian construction businesses have when trying to fulfill their corporate social responsibility? A survey with questionnaires was chosen as the data collection approach.

For the purpose of gathering data, a standardized questionnaire created especially for this study was used. According to Taherdoost (2016), content validity needs to be taken into consideration when creating a new data collection tool. The author also suggested that in order to guarantee an instrument's content validity, a thorough literature analysis should be conducted in order to identify pertinent topics. The instrument should then be forwarded to subject-matter experts for evaluation and pre-testing prior to administration. Facial and content validity were used to assess and validate the data collection instrument creation

procedure based on the aforementioned suggestions. First, a thorough analysis of the body of literature was conducted to give the theoretical foundation for the instrument and its components (see table 1). Second, the data gathering tool was modified and suggested by two academics who are experts in the subject matter under study, and they assessed it for relevance, clarity, and meaningfulness. Thirdly, the instrument was piloted in June 2020 with four CSR consultants in the Ghanaian construction industry and six fourth-year PhD candidates in the Department of Construction Technology and Management at the Kwame Nkrumah University of Science and Technology Kumasi, Ghana. They provided feedback, suggested changes to some of the terminologies used, and sought explanations for some of the not easily understood terms. The 4th-year PhD candidates were selected to validate the data collection instruments due to their knowledge of advanced research methods. Nineteen challenges were presented for the piloting out of which most of them were merged as a result of the feedback from the pilot study to nine for the actual data collection.

The study population was all contractors registered with the Association of Building and Civil Engineering Contractors of Ghana (ABCECG) and the Association of Road Contractors (ASROC). The stratified random sampling technique, a probability sampling technique, was employed to select companies within the sample frame. Each unit in the sample thus had an equal chance of being included in the survey. The Stratified random sample was chosen because when the population is heterogeneous or the variability

in the population values is large, simple random sampling is not suitable for selecting the sample units because it may be possible that all the units from the same group will be selected. The sample will not be representative of the population (Saunders *et al.*,2016).

A list of an uneven distribution of construction companies registered with ASROC and ABCECG across Ghana in good standing as of December 2019 was realised from the associations' secretariat. In the list received from both associations, some members could not be contacted through the addresses provided. These companies were removed from the list. Through recommendations from other contractors in the association, certain contractors not found on the original list but are in active operations and members of the association were contacted and subsequently included in the list. In the stratified random sampling of respondents, these two strata were used.

The Yamane (1967) formula was used to calculate the sample size for the investigation. The formula's compatibility with the random sampling technique led to its adoption (Israel 1992). Here is the formula.

$$n = \frac{N}{1+N(e)^2}$$

Where:

n = the sample size

N = the population size

e = the level of precision (0.5)

A confidence level of 95% and p = 0.5 degrees of variability were assumed for the equation (Israel 1992). Based on the

equation, the sample size was determined as follows:

$$n = \frac{1180}{1 + 1180(0.05)^2}$$

$n = 298.73$

The sample size of 298 contractors was

subsequently raised by 20% to 357 contractors to boost the number of replies. This is because the construction sector in Ghana is known for having unsatisfactory survey replies. The breakdown of the sampling proportion is shown in Table 2 below.

Table 2. Sample Size Allocation to Strata

Strata	Target Population	Proportion of Population	Proportion of Sample Size
Association of Building and Civil Engineering Contractors of Ghana	653	0.580	207.06 (55.41%)
Association of Road Contractors	527	0.420	149.94 (44.59%)
Total	1180	1	357

This study aimed to gain insight into the critical CSR activities militating against Ghanaian construction organisations. Hence, it was necessary to combine the two-contractor grouping in the country to help generalise the findings of this study.

Three hundred and fifty-seven (357) construction companies were issued the questionnaire, out of which two hundred and fifty (250) responded. The questionnaire was structured into three sections; section A introduced the purpose and gave a brief background of the study. Section B solicited the background information of the respondents. Section C elicited information on CSR challenges in the construction industry in Ghana. The respondents responded to the demographic and perception questions. The study employed a fuzzy synthetic evaluation model (FSEM) and Exploratory Factor Analysis (EFA) as the analytical tools.

For this study, EFA was used to evaluate construct validity and develop theoretical constructs. According to Thompson (2004) and Pett and Lackey (2003), EFA is used to evaluate construct validity in a survey, develop theoretical constructs, and prove proposed theories. The fuzzy synthetic evaluation model (FSEM) was also used to ascertain the critical challenges facing Ghanaian construction companies in fulfilling their CSR activities.

DATA ANALYSIS AND DISCUSSION

Table 2 displays the frequency and percentage distribution of the respondents' characteristics, along with information on contractor category, work position, years of experience, years of education, and years of company existence.

Table 3. Background Information

	Frequency	Percent
Respondents' category		
Road	95	38
Building	155	62
Total	250	100
Job Position		
Director	22	8.8
Managing Director	14	5.6
Safety Officer	38	15.2
Project Engineer	73	29.2
Project Manager	53	21.2
Others	50	20
Total	250	100.0
Educational Level		
PhD	3	1.2
MSC	64	25.6
BSC	91	36.4
B-TEC	30	12
HND	42	16.8
Others	20	8
Total	250	100.0
Years of Experience		
Less than 6 years	54	21.6
6-10 years	79	31.6
11-15 years	87	34.8
16-20 years	30	12
Total	250	100
Years of the existence of the company		
5-10 years	63	25.2
11-15 years	62	24.8
16-20 years	57	22.8
More than 20 years	56	22.4
Others	12	4.8
Total	250	100.0

According to the findings, the majority of respondents had a bachelor of science degree (BSc). Project engineers make up

the majority of the responders. Most of the enterprises have been in business for five to ten years, and a considerable

portion of the respondents have worked in the construction industry for eleven to fifteen years. To guarantee the correctness and dependability of the data, it is implied that each respondent has a substantial amount of expertise in the building sector.

Challenges Facing Construction Companies in Fulfilling Their CSR in Ghana

This study examined the difficulties construction companies face in implementing their corporate social responsibility. It found the underlying dimensions of

the difficulties through factor analysis, and the level of criticality of the identified elements was then determined using a fuzzy synthetic evaluation model to establish the criticality of the challenges.

Exploratory factor analysis (EFA) of challenges facing construction companies in fulfilling their CSR

The extraction and rotation techniques used by the EFA were principal component analysis (PCA) and varimax with Kaiser's normalisation. The construction company was confronted with nine challenges that required further examination.

Table 3: Challenges facing Construction Companies in Fulfilling their CSR in Ghana

	Extraction	Component		
		1	2	3
We do not have adequate training for CSR implementation	0.667	0.841		
We lack legal framework to guide CSR implementation in the industry	0.681	0.762		
We do not have relevant knowledge about CSR implementation	0.636	0.687		
We associate CSR with avoidable expenses	0.611	0.599		
There is too much corruption in the industry to be able to take up CSR implementation	0.713	-	0.76	
There are no significant benefits for CSR implementation	0.804		0.641	
We do not have sufficient financial resources for CSR implementation	0.656	-	0.635	
CSR is not incorporated into our company's vision and mission statement	0.738	-		0.762
We don't have any attachment to the community in order to carry out CSR.	0.668	-		0.704
Average	0.686			
Total		2.618	1.912	1.644
% of Variance		29.085	21.243	18.265
Cumulative %		29.085	50.328	68.594

KMO and Bartlett’s Test of Sphericity

KMO	0.863
Bartlett’s Test of Sphericity	
Approx. Chi-Square	719.13
df	36
Sig.	0.000

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Bartlett’s test of sphericity and the KMO measure of sample adequacy were used, and the results were very significant, meeting the $0.863 > 0.70$ criteria (Hair *et al.*, 2010). The outcome of the Bartlett’s test for sphericity showed that the chi-square had a high significant value at the $0.000 < 0.05$ level. The correlation matrix’s factorability and sample adequacy were both found to be highly satisfactory by the model.

After the indicators were extracted for the samples, the average communalities were 0.686. The average communality of the variables after extraction should be over 0.60, according to Field (2009) and Motulsky (2005), who also state that this is necessary to achieve the reliability of the results and interpretability of the factor analysis correlation matrix. After the indicators were extracted for the samples, the average communalities were 0.686. The average communality of the variables after extraction should be over 0.60, according to Field (2009) and Motulsky (2005), who also state that this is necessary to achieve the reliability of the results and interpretability of the factor analysis correlation matrix.

The factor loadings and eigenvalue were set to conventional high values of 0.5 and 1.0, respectively (Field, 2009; Hair *et al.* 2014). From Table 3, the total variance

explained by the variables indicate that, three components should be extracted for each of the data as their respective eigenvalues extraction determined. The rotated component matrix confirmed the three unique component factors as each variable dominantly belonged to a single factor. It could be suggested therefore that, the components that emerged are the perceived challenges facing construction companies in fulfilling their CSR.

The use of the rotated component matrix over the ordinary unrotated matrix was influenced by the ability of the rotated component matrix to yield and achieve simple robust structure which is easy identification and interpretation of results (Field, 2009). Considering the possible interrelations among the variables contained in each component and the factor loadings, a more suitable names that summarised the challenges facing construction companies in fulfilling their CSR explained by the components were derived. The components were labeled lack of knowledge in relevant CSR implementation, insignificant financial resources and corruption and lack of attachment to the community respectively.

Fuzzy Synthetic Evaluation Model of the Challenges facing construction companies in fulfilling their CSR

The study after establishing the underlying dimensions of challenges facing construction companies in fulfilling their corporate social responsibility (Table 4), employed the fuzzy synthetic evaluation model (FSEM) to ascertain the level of criticality of the challenges facing construction companies in fulfilling CSR in the catchment areas. The overall accuracy of the FSE model rest on the accuracy of the weightings assigned to each factor indicator and factor group (Lo,1999). This study employed the normalised mean method among others based on recommendation of Ameyaw and Chan (2016). The weighting functions were obtained by employing the normalisation of the mean scores of each factor and factor

groups following the works of Xu *et al.* (2010). The weightings were important to establish the relative significance (criticality of the challenges) as rated by the survey participants.

From Table 4, the weighting for lack of knowledge in relevant CSR implementation measurement items ranged from 0.231 to 0.265 and the group level weight was 0.456 relative to the three factors of challenges. The weightings for insignificant financial resources and corruption ranged from 0.316 to 0.342 and the group level weight was 0.330 and lack of attachment to the community weighting ranged from 0.469 to 0.531 and group level was 0.215.

Table 4: Challenges facing construction companies in fulfilling their CSR

Code		Mean	Weighting for each CF	Total Mean	Weighting for each CFP
	Lack of Knowledge in Relevant CSR Implementation	-		15.455	0.456
LK1	We do not have relevant knowledge about CSR implementation	3.56	0.231		
LK2	We do not have adequate training for CSR implementation	3.77	0.244		
LK3	We lack legal framework to guide CSR implementation in the industry	4.03	0.261		
LK4	We associate CSR with avoidable expenses	4.09	0.265		
	Lack of Financial Resources and Corruption	-		11.183	0.330
IFRC1	There is too much corruption in the industry to be able to take up CSR implementation	3.83	0.342		
IFRC2	We do not have sufficient financial resources for CSR implementation	3.83	0.342		

Critical corporate social responsibility challenges in the construction industry

IFRC3	There are no significant benefits for CSR implementation	3.53	0.316		
	Lack of Attachment to the Community	-			
LAC1	CSR is not incorporated into our company's vision and mission statement	3.87	0.531	7.288	0.215
LAC2	We don't have any attachment to the community in order to carry out CSR.	3.42	0.469		
	Total			33.926	1.000

Table 5. Challenges facing construction companies in fulfilling their CSR

Code		Weight	Membership Function Level 3	Membership Function Level 2
	Lack of Knowledge in Relevant CSR Implementation	-		
LK1	We do not have relevant knowledge about CSR implementation	0.231	0.044,0.218,0.140,0.328,0.271	0.028, 0.138, 0.135, 0.329, 0.371
LK2	We do not have adequate training for CSR implementation	0.244	0.026,0.162,0.157,0.323,0.332	-
LK3	We lack legal framework to guide CSR implementation in the industry	0.261	0.022,0.122,0.114,0.293,0.450	-
LK4	We associate CSR with avoidable expenses	0.265	0.022,0.062,0.132,0.370,0.414	-
	Insignificant Financial Resources and Corruption	-		
IFRC1	There is too much corruption in the industry to be able to take up CSR implementation	0.342	0.022,0.144,0.179,0.297,0.358	0.043, 0.187, 0.125, 0.286, 0.359

IFRC2	We do not have sufficient financial resources for CSR implementation	0.342	0.031,0.175,0.118,0.285,0.390	-
IFRC3	There are no significant benefits for CSR implementation	0.316	0.079,0.245,0.074,0.275,0.328	-
	Lack of Attachment to the Community	-		
LAC1	CSR is not incorporated into our company's vision and mission statement	0.531	0.054,0.138,0.089,0.321,0.397	0.063, 0.151, 0.159, 0.317, 0.309
LAC2	We don't have any attachment to the community in order to carry out CSR.	0.469	0.074,0.165,0.239,0.313,0.209	-

The membership function (MF) of each factor was estimated from the percentage responses of the respondents. It ranged between 0 and 1 and derived from Level 2 and Level 1 (Ameyaw and Chan, 2016). The membership function of each factor was further estimated from the membership functions of the factor group within each factor level. This membership functions of each factor and factor groups were used to develop the fuzzy matrix. The estimation of the membership functions for level 3, the percentages of responses of the participants for the various scales; thus,

5-point Likert scale comprising strongly disagree, disagree, neutral, agree and strongly agree.

From the ratings of the respondents, the ratios of each indicator represented the membership function of the model (Table 4). The membership functions (level 3) form the foundation for estimating the membership functions (Level 2) of the factors. Membership functions level 2 was obtained from the products of factor weightings and membership functions level 3 (fuzzy matrix), thus, fuzzy evaluation matrix.

Table 6: Overall Indices for Challenges

	Index	Linguistic	Ranking
Lack of Knowledge in Relevant CSR Implementation	3.881	High	1
Insignificant Financial Resources and Corruption	3.732	High	2
Lack of Attachment to the Community	3.656	High	3

From Table 6, the first ranked challenge was Lack of Knowledge in Relevant CSR Implementation recording an index of 3.881 indicating that its criticality as a

challenge to the construction companies is high. The second challenge identified from the result was insignificant financial resources and corruption, which record-

ed index of 3.732 (high) and lastly lack of attachment to the community was also high.

DISCUSSION

According to the survey, construction companies have many hurdles in carrying out their corporate social responsibility (Table 3). A fuzzy synthetic evaluation model (FSEM) was then used to determine how serious these problems were. Table 4 demonstrates this: “We believe that CSR results in avoidable expenses” received the highest mean score (4.09), while “we don’t need a link to the community to carry out CSR” received the lowest mean score (3.42). As a result, the individual indicators’ mean score ranged from 4.09 to 3.42, indicating that there are significant CSR challenges facing the Ghanaian construction industry across all nine aspects. Furthermore, the factor analysis yielded significant overall indices for each of the three components: Corruption and Lack of Attachment to the Community; Insignificant Financial Resources; and Lack of Knowledge in Relevant CSR Implementation (see Table 6). The first ranked challenge was lack of knowledge in relevant CSR implementation (index of 3.881). The second challenge identified from the result was insignificant financial resources and corruption (index of 3.732) and lastly lack of attachment to the community (index of 3.656). The findings of this study corroborate the few CSR implementation challenges studies found in the literature. For example, the study of Loosemore and Phua (2011) revealed a number of barriers to effective CSR in the construction industry, including established cultures and ways of working,

confusion of what CSR means, lack of leadership and management skills, lack of CSR data, scepticism about returns on investment, supply chain resistance, and sceptical clients. These challenges do relate to the three challenges identified in this study. Another study carried out in India by Prasad and Kumar, (2022) and Kumar, (2019) also revealed that factors such as Lack of appropriate CSR training and conceptualisation, Lack of significant CSR implementation benefits, Lack of capacity and expertise, Lack of strategic guidance and support from senior leaders or managers within the organisation, Lack of awareness and knowledge of CSR among customers affect the effective implementation of CSR in the construction industry.

The first ranked challenge reported in this study is the lack of knowledge in relevant CSR implementation. Other studies confirm that ‘the confusion of what CSR means’ is a challenge to effective CSR implementation in the construction industry (Loosemore and Phua, 2011). Similarly, Nkrumah (2013), revealed that the management of CSR among Ghanaian SMEs is seen as just helping the community. This understanding portrayed by some Ghanaian SMEs is a narrow view of CSR. This suggest that the majority of construction firm managers do not understand the comprehensiveness of CSR. Knowledge drives action; without knowledge, construction firms will be unaware of the benefits of CSR and will as a result not commit to it. Barde and Tela (2015) highlighted the importance for construction companies to reconcile the conflicting interests of their various stakeholders including the community. This underscore the importance of con-

struction companies being fully aware of the purpose and benefits of CSR. Thus, it is quite worrying that the first ranked challenge is 'lack of knowledge in relevant CSR implementation'. This implies that construction industry stakeholders such as the government, professional bodies, and learning institutions (e.g., universities) have a crucial responsibility of creating/promoting awareness and educating the construction industry role players on the benefits of CSR. Strategies such as seminars, conferences and public lectures could be adopted to create awareness.

Insignificant Financial Resources and Corruption is the second challenge reported in this study. Unsurprisingly, literature reports that prior financial performance determines the willingness of CSR initiatives in the Ghanaian construction industry (Lichtenstein *et al.*, 2013). The reality is that most of the construction firms in Ghana fall into the category of SMEs (Adjei *et al.*, 2014); as a result, the majority do not have significant financial resources and/or good financial performance. Coupled with corruption, the already struggling construction firms are unable to commit resources to CSR. Loosemore and Phua (2011) also reported, 'scepticism about returns on investment' as one of the factors limiting the implementation of CSR. The fact that these construction firms are unsure of the benefits to be accrued from investing resources into CSR also deter them from participating in it. This implies that education and creating awareness on the importance of CSR is paramount. There is also the need for construction firms to make allowance for the additional cost associated with the implementation of

CSR when preparing estimates. The government and other construction industry stakeholders also have a responsibility of creating an environment devoid of corruption. By so doing, firms will be able to commit more resources to promote CSR.

Corporate social responsibility is about bringing improvement and relief to wherever a construction company finds itself. If construction firms do not feel attached to the communities where they work, then there is no way they will give back to them. Unfortunately, lack of attachment to the community is the third challenge reported in this study. According to Loosemore and Phua (2011), established cultures and ways of working could hinder the implementation of CSR. Ofori and Hinson (2007) are of the opinion that a company responds in its own unique way to CSR issues. This implies that construction firms have a responsibility to develop a unique organisational culture (i.e., vision, values, policies and objectives) that embeds CSR within the routine operations of their business. Moreover, construction firms must devise means of breaking the barriers that limit community engagement. This is crucial because CSR can only thrive if firms develop a culture that engages and embraces the community where they operate.

Barde and Tela (2011) emphasised that the challenges faced by construction companies within today's complex and competitive market environment are products of economic and non-economic related forces. Thus, construction firms need to institute and implement unique practices that can help them survive this stiff competition and remain buoyant. CSR as a practice could help construction

firms to realise great benefits; therefore, it is important that construction firms put measures in place to limit any challenge that can hinder the implementation of CSR.

CONCLUSION

This study examined the critical challenges facing Ghanaian construction companies in fulfilling their CSR obligations. Through a cross-sectional survey, the study retrieved responses from construction companies in Ghana. Factor analysis (EFA) and fuzzy synthetic evaluation model were used to identify the underlying dimensions, and determine the level of criticality of the identified challenges. The EFA utilised PCA and varimax with Kaiser' Normalisation as the extraction and rotation methods respectively, to group the nine 9 indicators (challenges) into 3 components. The components were labeled lack of knowledge in relevant CSR implementation, insignificant financial resources and corruption and lack of attachment to the community. A high degree of sampling adequacy and factorability of the correlation matrix were demonstrated by the findings of the Bartlett's test of sphericity and the KMO measure of sampling adequacy. Following the EFA, fuzzy synthetic evaluation model (FSEM) was performed to ascertain the level of criticality at which construction companies faced these challenges in fulfilling CSR in the catchment areas. The challenge with the highest level of criticality was lack of knowledge in relevant CSR implementation and the least critical challenge was lack of attachment to the community. The findings of this study will be relevant to construction stakeholders in realising

the benefits of CSR as a practice and influence construction firms to put in place measures to limit any challenge that may hinder the fulfilment of CSR among construction companies in Ghana.

REFERENCES

- Akotia, J., Opoku, A., Hafiz, F., 2017. The extent of practitioners' involvement in the delivery of sustainable urban regeneration projects in UK. *Eur. J. Sustain. Dev.* 6 (2), 147e164.
- Alan Griffith (2011) Fulfilling Contractors' Corporate Social Responsibilities using Standards-Based Management Systems, *International Journal of Construction Management*, 11:2, 37-47, DOI:10.1080/15623599.2011.10773167.
- Ametepey, S., Jnr, E. and Cobbina, J. (2022) Barriers to the Growth of Small and Medium Scale Construction Enterprises in Ghana. *Open Journal of Civil Engineering*, 12, 38-55. doi: 10.4236/ojce.2022.121004.
- Ameyaw, E.E. and Chan, A.P. (2016), "A fuzzy approach for the allocation of risks in public-private partnership water-infrastructure projects in developing countries", *Journal of Infrastructure Systems*, Vol. 22 No. 3, p. 04016016
- Amoako, K., and Boateng, E., 2022. Analysis of the effectiveness of Corporate Social Responsibility in brand marketing with AAKER Brand Equity and Daisy Wheel Models. *Technium Social Sciences Journal*, 30(1), 484-519. <https://doi.org/10.47577/tssj.v30i1.6089>.
- Amponsah-Tawiah and Dartey-Baah (2011), the strategic decision of an organisation to voluntary act upon the social factors that have the potential of militating against the fulfilment of corporate goals.

- Antony King Fung Wong, Seongseop (Sam) Kim & Suna Lee (2022) The evolution, progress, and the future of corporate social responsibility: Comprehensive review of hospitality and tourism articles, *International Journal of Hospitality & Tourism Administration*, 23:1,1-33, DOI: 10.1080/15256480.2019.1692753.
- Arthur-Aidoo B.M., C. O. Aigbavboa & W. D. Thwala (2018) Exploratory factor analysis on drivers of firm's growth among construction SMEs in Ghana, *African Journal of Science, Technology, Innovation and Development*, 10:1, 20-27, DOI: 10.1080/20421338.2017.1380932.
- Atuguba, R.A. and Dowuona-Hammond, C. (2006), "Corporate social responsibility in Ghana", a research report prepared for the Frederick Ebert Foundation (FES), Accra, Ghana.
- Babbie, Earl R. *The Practice of Social Research*. 12th ed. Belmont, CA: Wadsworth Cengage, 2010; Muijs, Daniel. *Doing Quantitative Research in Education with SPSS*. 2nd edition. London: SAGE Publications, 2010.
- Boateng E, Seth Amoako, Amoako K, Acheampong K, and Attoh A 2020. The Role Impact of Corporate Social Responsibility In Building Small and Medium Enterprises (SMEs) Brand Image in Ghana. *International Journal of Current Science Research and Review* ISSN: 2581-8341 Volume 05 Issue 05 May 2022 DOI: 10.47191/ijcsrr/V5-i5-17, Impact Factor: 5.995 IJCSRR @ 2022
- Boadi, E. A., He, Z., Bosompem, J., Say, J., and Boadi, E. K., 2019. Let the talk count: Attributes of stakeholder engagement, trust, perceive environmental protection, and CSR. *SAGE Open*,9(1), 1–15.
- Bo X , Olanipekun A , Qing C., Linlin X, Yong L 2018. Conceptualising the state of the art of corporate social responsibility (CSR) in the construction industry and its nexus to sustainable development. *Journal of Cleaner Production* Received 14 November 2017 Received in revised form 17 May 2018 Accepted 19 May 2018 Available online 21 May 2018.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Cowan, K., and F. Guzman. 2020. "How CSR Reputation, Sustainability Signals, and Country-of-Origin Sustainability Reputation Contribute to Corporate Brand Performance: An Exploratory Study." *Journal of Business Research* 117: 683–693.
- Duman, D.U., Giritli, H., McDermott, P., 2016. Corporate social responsibility in construction industry A comparative study between UK and Turkey. *Built Environ. Proj. Asset. Manag.* 6 (2), 218e231.
- Elmualim, A., 2017. CSR and sustainability in FM: evolving practices and an integrated index. In: Ding, L., Fiorito, F., Osmond, P. (Eds.), *International Highperformance Built Environment Conference - a Sustainable Built Environment Conference 2016 Series*. Elsevier Science Bv, Amsterdam, pp. 1577e1584
- Field, A., 2009. *Discovering Statistics Using SPSS: Introducing Statistical Method* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Israel, Glenn D. 1992. *Sampling the Evidence of Extension Program Impact. Program Evaluation and Organizational Development*, IFAS, University of Florida. PEOD-5. October.

- Kim, H., Woo, E., Uysal, M., & Kwon, N. (2018). The effects of corporate social responsibility (CSR) on employee well-being in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 30(3), 1584–1600. doi:10.1108/IJCHM-03-2016-0166
- Kim, H. L., Rhou, Y., Uysal, M., & Kwon, N. (2017). An examination of the links between corporate social responsibility (CSR) and its internal consequences. *International Journal of Hospitality Management*, 61, 26–34. doi:10.1016/j.ijhm.2016.10.011
- Kojo Kakra Twum, John Paul Kosiba, Ibn Kailan Abdul-Hamid & Robert Hinson (2022) Does Corporate Social Responsibility Enhance Political Marketing?, *Journal of Nonprofit & Public Sector Marketing*, 34:1, 71-101, DOI: 10.1080/10495142.2020.1798850
- Kumar N, 2019. Corporate social responsibility: an analysis of impact and challenges in India. *Int journal of social sciences management and entrepreneurship* 3(2): 53-63, October 2019 © sage global publishers www.sagepublishers.com.
- Liao, P.-C., Shih, Y.-N., Wu, C.-L., Zhang, X.-L., Wang, Y., 2018. Does corporate social performance pay back quickly? A longitudinal content analysis on international contractors. *J. Clean. Prod.* 170, 1328e1337.
- Liao, P.C., Xia, N.N., Wu, C.L., Zhang, X.L., Yeh, J.L., 2017. Communicating the corporate social responsibility (CSR) of international contractors: content analysis of CSR reporting. *J. Clean. Prod.* 156, 327e336.
- Lichtenstein Edward Badu De-Graft Owusu-Manu David John Edwards Gary D. Holt (2013), "Corporate social responsibility architecture and project alignments", *Journal of Engineering, Design and Technology*, Vol. 11 Iss 3 pp. 334 – 353
Permanent link to this document: <http://dx.doi.org/10.1108/JEDT-09-2012-0041>.
- Lim, B.T.H., Loosemore, M., 2017. How socially responsible is construction business in Australia and New Zealand? In: Ding, L., Fiorito, F., Osmond, P. (Eds.), *International High-performance Built Environment Conference - a Sustainable Built Environment Conference 2016 Series*. Elsevier Science Bv, Amsterdam, pp. 531e540.
- Lin, X., Ho, C.M.F., Shen, G.Q.P., 2017. Research on corporate social responsibility in the construction context: a critical review and future directions. *Int. J. Constr. Manag.* 1e11.
- Loosemore, M., Lim, B.T.H., 2017. Linking corporate social responsibility and organizational performance in the construction industry. *Construct. Manag. Econ.* 35 (3), 90e105.
- Mahmud, A., Ding, D., Kiani, A., and Hasan, M., 2020. Corporate social responsibility programs and community perceptions of societal progress in Bangladesh: A multi-method approach. *SAGE Open*, 10(2), 1–17. <https://doi.org/10.1177/2158244020924046>.
- Naglaa Ibrahim Khamis & Wan Khairuzzaman Wan Ismail (2022) The impact of corporate social responsibility on corporate image in the construction industry: a case of SMEs in Egypt, *Journal of Sustainable Finance & Investment*, 12:1, 128-146, DOI: 10.1080/20430795.2021.1930992
- Nave A. and Ferreira J., 2019. Corporate social responsibility strategies: Past research and future challenges. *Journal of corporate social responsibility and environmental management. Corp*

- Soc Resp Env Ma. 2019; 26:885–901. wileyonlinelibrary.com/journal/csr, © 2019 John Wiley & Sons, Ltd and ERP Environment,
- Prasad A. and Kumar R., 2022. Challenges and opportunities of brand corporate social responsibility classification: A review, new conceptualisation and future research agenda. *International journal of consumer studies*. *Int J Consum Stud*. 2022;1–33. wileyonlinelibrary.com/journal/ijcs © 2022 John Wiley & Sons Ltd.
- Qian Zhang, Bee Lan Oo , Benson Teck Heng Lim. 2020. Linking corporate social responsibility (CSR) practices and organisational performance in the construction industry: A resource collaboration network. Received in revised form 6 November 2021; Accepted 12 December 2021 Available online 17 December 2021. 0921-3449/© 2021 Elsevier B.V. All rights reserved. <https://doi.org/10.1016/j.resconrec.2021.106113>
- Qian Zhang, Bee Lan Oo, Benson Teck Heng Lim 2018. Drivers, motivations, and barriers to the implementation of corporate social responsibility practices by construction enterprises: A review. <https://doi.org/10.1016/j.jclepro.2018.11.050> 0959-6526/© 2018 Elsevier Ltd. All rights reserved.
- Saunders, L.W., McCoy, A.P., Kleiner, B.M., Lingard, H., Cooke, T., Mills, T., Blismas, N. and Wakefield, R., 2016. International benchmarking for performance improvement in construction safety and health. *Benchmarking: An International Journal*.
- Taherdoost H. Validity and Reliability of the Research Instrument; How to Test the Validation of a Questionnaire/Survey in a Research. *International Journal of Academic Research in Management (IJARM)*, 2016, 5. hal-02546799.
- World Bank. 2021. Sustainability Review 2021. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/36352> License: CC BY 3.0 IGO.”URI
- Zhang Q., Lan B., Teck B., Lim H, 2019. Drivers, motivations, and barriers to the implementation of corporate social responsibility practices by construction enterprises: A review. *Journal of Cleaner Production*. <http://www.elsevier.com/locate/jclepro>.
- Zhang, C., Hu, M., Dong, L., Xiang, P., Zhang, Q., Wu, J., Li, B., Shi, S., 2018. Co-benefits of urban concrete recycling on the mitigation of greenhouse gas emissions and land use change: a case in Chongqing metropolis, China. *J. Clean. Prod*.
- Zhou, Z.P., Mi, C.M., 2017. Social responsibility research within the context of megaproject management: trends, gaps and opportunities. *Int. J. Proj. Manag.* 35 (7), 1378e1390.