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# Critical Success Factors for Corporate Social Responsibility Adoption in the Construction Industry in Malaysia

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**Abstract:** In the construction industry, corporate social responsibility (CSR) is increasingly valued as a strategic tool for business sustainable development and for addressing ethical issues. However, understanding the concept of CSR in the construction industry, and how to practice it, is limited. This study aims to explore and assess the factors critical to the successful adoption of CSR in the construction industry through the lens of critical success factors (CSFs) theory. Through a literature review, a list of potential factors that may theoretically have a major impact on CSR adoption in the construction industry was compiled as a proxy. Then, the potential factors were refined and validated by employing a Delphi technique. An expert panel of sixteen qualified Malaysian industry practitioners and academia was assembled. Results from three iteration rounds of the Delphi process depicted that successful adoption of CSR in practices depends upon eight CSFs including financial resources, top management support, managerial or internal skills on CSR, national economic growth, employees' education and training on CSR, participation of key stakeholders in the CSR process, effective CSR communication, and organizational structure. This study contributes to the field by addressing a theme that has been covered less in literature. Knowing the CSFs for CSR adoption in advance could help the construction firms to successfully integrate CSR into business strategies and minimize the risk of failure. Policy-makers could also consider the findings when promoting the CSR agenda or development programs that adhere to the construction industry's way forward. Although this study is particularly suited for the Malaysian context, nevertheless, the outcomes could shed some light upon the CSR initiative in other countries, since CSR adoption status in the construction industry overall does not significantly differ between countries.

**Keywords:** corporate social responsibility; critical success factors; construction industry; Malaysia; Delphi study

## 1. Introduction

In today's business environments, corporate social responsibility (CSR) has evolved to an important agenda and its scope has been broadened from responsible business to strategic decision-making. A strategic approach to CSR is regarding a strategic competitive tool for an organization whereby socially responsible business behavior is an effective and necessary strategy to ensure survival in chaotic, competitive, and ever-changing environments [1]. The link between CSR and competitive advantage can be achieved if social needs, environmental limits, and corporate interests are well coordinated together [2]. Porter and Kramer [3] described the linkage as "creating shared value",

which hypothesized that business success and social welfare are interdependent. In general, CSR can be understood as ethical behaviors of a business that integrate business and society into business strategies and practices [4]. The emergence of CSR is regarded as rooted on the legal basis and driven by social and market concerns about sustainable development, which significantly differ between countries [5]. Thus, it is probably not surprising that there is no single universally-accepted definition of CSR to date. As a result, CSR is seen as a concept with many definitions and practices, and the way it is understood and implemented differs greatly between country and industry, and even within a company. Nevertheless, irrespective of one or another perspective, both emphasize on the relationship between business and society.

As an organizational phenomenon, CSR has become increasingly prevalent and visible in many industries. In the construction industry, the important need for firms to be engaging in CSR can be viewed from two perspectives. The first stems from the palpable potential benefits derived from such effort. In business practice, the drive to adopt CSR was predicted based on the idea that by integrating and interacting social, ethical, and environmental concerns into business operation could lead to the achievement of business sustainability [2,3]. It has been generally agreed that, by being socially responsible, a company could increase turnover, improve public image, enhance employee loyalty, and attract talented personnel, and, consequently, sustainable competitive advantage and better organizational performance could be expected [6]. The second is the fact that the nature of the industry itself, which is compounded with a wide range of unethical issues. Excessive natural resource-exploitative [7], rampant with corruption [8], human rights abuse [9], lacks of occupational safety and health [10], and poor community relations [11] are among the unethical issues that currently exist and are common in the industry. According to Battaglia et al. [12], firms who embraced CSR strategies are encouraged to be more responsible in their activities in the areas such as: Environmental-related CSR, which refers to actions taken to mitigate a company's negative operational impacts on the environment, such as energy efficiency measures, reduction in pollutants, water saving initiatives, and reduction in waste dangerous production; workplace CSR, that refers to a company's actions in treating its employees, including recruitment, workforce diversity, pay and working conditions, health and safety, and human rights; community-related CSR, which deals with the relationships between a company and communities affected by its operations; and marketplace CSR, that refers to actions around the relationships between a company and its supply-chain, including responsible advertising and marketing, dealing with customer complaints, ethical business practices, and imposing social and environmental requirements on suppliers. Therefore, the CSR framework is seen as an appropriate platform, not only as a strategic competitive tool but also for advanced mitigation strategies to minimize the negative effects brought by the industry.

However, despite the progress in CSR adoption, there has been little advancement in CSR implementation in the construction industry. It has led to the argument that the CSR phenomenon within the construction industry is relatively immature and how it is implemented has yet to be clearly understood [6]. Thus, it is not surprising that the adoption rate of CSR in the construction industry is much lower compared to other major industries [13], although many types of initiatives have been given [14]. Extant literature revealed at least two possible issues underlying the lower adoption rate. The first is the fact that construction firms often do not really understand what CSR is about and the benefits of its adoption. Lack of understanding on CSR concepts has been reported as the main reason for the absence of a formal CSR policy in many construction firms, such as in Australia and New Zealand [6,15], Turkey and United Kingdom [16], and Malaysia [14]. As a result, although construction firms have incorporated some aspects of CSR into their business activities, they do not refer to such practices as CSR. The second possible issue is the lack of proper guidelines for CSR adoption in the construction industry. For instance, the lack of a clear legislative and an institutional framework that could guide firms on how to make sense of CSR practices have been reported as the main challenges faced by construction firms in Malaysia [14], Australia [16], Sri Lanka [17], Kenya [18], and Saudi Arabia [19]. These studies have provided an indication that the adoption status of CSR in

the construction industry in both developed and developing countries do not differ significantly. One possible reason is due to the fact that the majority of businesses operating within the construction industry worldwide are small and medium-sized enterprises (SMEs), thus, their characteristics are significantly affected by current practices within the industry [16,20,21]. It should be noted here, the terms of the construction firms used in this study are referred to as construction SMEs. It is believed that the bigger construction firms have already been practicing CSR for transparency reasons to their shareholders. Indeed, Malaysian public-listed firms, including construction firms, are mandatorily required to adopt CSR practice and disclose their CSR activities in annual reports [22].

To this end, the construction industry is clearly an industry where there is an urgent need to promote an ethical business philosophy in line with the concept of CSR. But then, how to embed the CSR agenda into a practice? Specifically, which elements are the most critical to such efforts and, in turn, values for its adoption? Although the CSR agenda is an attractive idea, what factors lead to the successful adoption remains an area of conjecture. This indicates the fact that very little effort has been made to conduct such studies to date, and to determine a set of crucial factors that affect implementation of CSR in the construction industry. Thus, there exists a larger gap in CSR literature, hence offering justification for this exploratory contribution. In particular, the current study intends to uncover drivers that can enhance the successful adoption of CSR practices in the Malaysian construction industry through the lens of critical success factors (CSFs) theory. CSFs is a well-known managerial methodology aim at developing planning instruments that are essential for an organization in finding the right strategy and, in turn, to accomplish its mission [23]. Knowing the CSFs for CSR adoption in advance will help construction firms to integrate CSR into their strategic planning with more focus and efficiency.

It is expected that the outcomes of this study could provide a better understanding on how to successfully integrate CSR into the business strategies of Malaysian construction firms. By considering the CSFs, construction firms are guided and directed on how to obtain optimal performance from CSR and minimize the risk of failure. Policy-makers could also consider the findings when promoting the CSR agenda or development programs that adhere to the Malaysian construction industry's way forward. Finally, although this study is particularly suited for the Malaysian context, nevertheless, the outcomes could shed some light upon the CSR initiative in other countries, since CSR adoption status in the construction industry overall does not significantly differ between countries.

## 2. Corporate Social Responsibility (CSR)

CSR has evolved from executives' philanthropic activities to a valuable component of stakeholder management and has been incorporated into strategic performance models [24]. Today, the discussion on the CSR concept has significantly increased in many countries and industries, and has become a popular research stream across many scientific disciplines. As a result, existing CSR literature encompasses many different perspectives. It is common to observe the term CSR referring to various names that define "ethical business", such as corporate sustainability, corporate citizenship, triple bottom line, socially responsible behavior, and others [25]. Nevertheless, these variants of CSR do not change its basic meaning.

A substantial body of literature is available offering various concepts that define the scope of CSR in the social context. Consequently, several different CSR philosophies and conceptualizations have been forwarded as an effort to represent the relationship between business and society. However, Carroll's pyramid of CSR and triple bottom line (TBL) are regarded as the most well-known and influential models that provide an understanding on CSR concepts [26,27]. The Carroll's pyramid of CSR model recasts four components of CSR in the form of a pyramid. Economic responsibilities are placed at the bottom of the pyramid, followed by legal responsibilities, ethical responsibilities, and philanthropic responsibilities at the highest position. Carroll [28] described philanthropic responsibilities as "purely voluntary", representing a good corporate citizen by contributing resources to the community in the aim of improving quality of life. Ethical responsibilities are an obligation to do what is right and avoiding

harm. Meanwhile, legal responsibilities are about obeying the law as law is society's codification of right and wrong. Lastly, economic responsibilities require businesses to be profitable and become the foundation for other components. It is clearly shown that wealth creation and earning profits are the foremost priority of a business. However, such objectives must be achieved by compliance with legal requirements, and at the same time, businesses must respond to the ethical and philanthropic concerns of its stakeholders. On the other hand, the concept of TBL argues that firms should have to engage in three different bottom lines. As explained by Elkington [29], the first is the bottom line of the company's "profit and loss" account, which refers to the traditional measure of corporate profit. The second is the bottom line of a company's "people" account, which relates to a measure of how socially responsible an organization has been throughout its operations. The third is the bottom line of the company's "planet" account, which is a measure of how environmentally responsible has been emphasized. The TBL concept is also known with the notion of 3Ps—people, profit, and planet—which refers to the actions of businesses in treating environmental and social issues similar to financial results [30]. This concept has focused more on measurement of a firm's CSR performance by emphasizing on environmental, social, and economic dimensions that may accrue beside a firm's financial bottom-line [31]. Thus, TBL can be understood as an organization's obligations toward economic development, social justice, and environmental stewardship.

It should be noted here that CSR is not a theory by itself. The concept of CSR has been viewed from several different theories to explain the behavior of economic units emerging from its activities [32]. However, the most widely used theoretical frameworks for analyzing the effects brought by CSR are stakeholder theory and resource-based view (RBV) theory [25,33]. In addition, theory of social capital has been suggested suitable for SMEs [34]. As opposed to the traditional stockholder view, whereby the prime objective of a firm is to maximize stockholder value as the one and only social responsibility of a business [35], stakeholder theory argued that a business has wider responsibilities that are best expressed in terms of the stakeholder concept [36]. The fundamental idea of stakeholder theory is to consider the moral interests of corporate groups rather than just those of shareholders [37]. In this view, moral philosophy perspectives suggest CSR is an act of reciprocity between a firm and its stakeholders and is manifested in stakeholder theory [38]. Thus, CSR activities enhance firm value through strengthening its stakeholder relationships. Meanwhile, the RBV is a framework that shows how firms derive economic sustainability from their internal resources and capabilities [39]. Particularly, the RBV addresses the fit between a firm's ability in term of its resources and capabilities, and its opportunities [32]. In other words, resources are the means through which firms accomplish their activities and can be a source of competitive advantage if the firms' are able to effectively assemble, integrate, and manage them, and are often referred to as firms' capabilities [40]. Generally, resources within the RBV can be divided into two fundamental categories: tangible resources (financial and physical assets) and intangible resources (intellectual property, organizational, reputational, and capabilities assets) [41]. The differentials in performance are explained by the existence of firms' resources and capabilities in term of valuable, rare, inimitable, and non-substitutable, which form the source for a competitive advantage [42]. In strategic literature, these firm-specific resources are known as valuable, rare, inimitable, and not substitutable resources. From the RBV perspective, the contribution of CSR to a firm's financial performance can be viewed from two important insights. First, the RBV focuses on performance as the key outcome variable and, second, the RBV explicitly recognizes the importance of intangible resources such as know-how, corporate culture, and reputation [40].

On the other hand, social capital refers to the connections among individuals, social networks, and the norms or reciprocity and trustworthiness that arise from them [43]. It is considered as an intangible resource of a firm that is related to organization performance through various aspects such as building of trust, reputation, legitimacy, consensus, and co-operation between companies, which are needed to perform business activities [44]. Thus, the theory of social capital focused on the value of relationships between individuals in organizations, or between organizations, or within other organizations [45]. In the context of the CSR, this theory is more representative of the attributes of SMEs rather than

stakeholder theory, which describes a situation better for larger firms [25]. It is mainly due to the unique resource and survival challenges that SMEs face, which is not so pronounced in large firms [46]. In line with stakeholder and RBV theories, the theory of social capital emphasizes the importance of social networks that firms create in their everyday operations, and could be used to gain competitive advantages [47]. In other words, economic prosperity and sustainable development could be achieved if the community increases their level of social participation and, in turn, generate positive attitudes toward firms as a result of CSR activities [48]. Clearly, both theories provide a strategic anchor by which firms can use CSR for enhancing their values.

Nevertheless, despite many theories being grounded, a successful CSR practice can only be achieved if its holistic views are well understood. As an organization strategic competitive tool, integrating CSR into the firm's strategic objectives will only make sense if several crucial factors related to its adoption efforts are well understood, and if it is consistent with organizational strategic planning. With such understanding, CSR will be able to be successfully adopted in line with the firm's strategic objectives and its internal characteristics. On the other hand, the complexity of CSR practice means that success in its adoption requires referral to a solid methodical foundation and proven scientific theories. In this regard, the theory of CSFs seems to have a good basis for stating what criteria should be followed for such efforts. Thus, CSFs is seen as the term for an element that is necessary for an organization to achieve its mission, in this sense—CSR adoption.

### 3. Critical Success Factors (CSFs)

Boynton and Zmud [49] regarded CSFs as representing the managerial and enterprise area of an organization that must be given special and continual attention to bring about high performance. CSFs include issues vital to an organization's current operating activities and to its future success. It is a critical factor or activity required for ensuring the success of an organization. Rockart [50] defined CSFs as "the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization". This definition is generic and; therefore, can be applied for the current study without requiring much modification. In the context of the current study, CSFs allow the focused monitoring of factors that are critical to CSR adoption in Malaysian construction firms, from which appropriate actions can be taken to implement such practices within organizations. In the construction engineering management (CEM) literature, the CSFs approach has long been recognized and applied in many different contexts, including, among others, build–operate–transfer projects [51], project planning and control [52], and building information modelling and sustainability practices [53].

### 4. Potential CSFs for CSR Adoption in the Construction Industry

Whilst a substantial amount of literature exists on CSR in the construction industry, very few, if any, studies have been conducted utilizing CSFs. Supporting this, in an analysis of a systematic selection of 68 papers published in different mainstream journals between 2000 and 2017, Xia et al. [54] revealed that only four research themes underlie the current CSR research in construction industry. These include: CSR perception, CSR dimensions, CSR implementation status, and CSR performance. Thus, it can be understood that little attention has been given on the issue of CSFs in CSR research in the construction industry. Review of literature in other sectors outside the construction industry have also shown that only a relatively few empirical studies have attempted to explore the CSFs for CSR to date. In a case study of three global companies that serve in different business sectors in Belgium, Maon et al. [55] introduced a framework consisting of fifteen CSFs, that reside at the corporate level, organizational level, and managerial level, as the factors that play key roles in the CSR implementation and process. A study of Sangle [56] reported four CSFs for CSR adoption in the Indian public sector, including the ability to integrate CSR with functional strategies, organizational ability to manage stakeholder groups, ability to evaluate CSR benefits, and top management support. Kahreh et al. [57] revealed twenty-three CSFs for CSR adoption in the Iranian banking sector categorized under

five main organizational function areas, namely financial, marketing, environmental, strategic, and human resources. Meanwhile, Fuzi et al. [58] suggested six CSFs for CSR practice in the Malaysian automotive industry, including employee involvement, customer focus, corporate governance, human right, environment, and community and society. Although the studies have reported some consistent results, the importance of these already established CSFs cannot be generalized since they appear to be relative and vary within the business environment, the industry, and the country. Experts have remarked that one success factor may be of great importance in one industry or country but it may not necessarily be of equal importance in another industry or country [50,59,60].

As an alternative approach, the current study used a literature search to compile a list of potential and relevant factors, regardless of industries or countries, that may theoretically have a major impact on CSR adoption in the construction industry as a proxy. Then, an assessment was made on their criticalness based on the frequency at which they were observed as critical in literature. In identifying the potential success factors, priority was given on literature in the construction industry (i.e., the drivers or barriers for implementing CSR). For example, “no support from top management” has been regarded as a critical obstacle to implementing CSR in the Malaysian construction industry [14]. Thus, this factor was included in the list of potential factors for CSR adoption in the Malaysian construction industry. Second, equivalent studies, regardless of industries and countries, on success factors, determinants, drivers, and barriers to implementing CSR were reviewed. For example, a study of Shen et al. [61] in the textile industry reported that lack of stakeholders’ awareness, lack of training, financial constraints, lack of customer awareness, lack of knowledge, lack of regulations and standards, and lack of top management commitment are among the barriers to CSR implementation. Therefore, these factors were added to the list of potential factors. Results from analysis of thirty-three selected studies revealed that twelve factors were likely to be the potential success factors for CSR adoption in the Malaysian construction industry. Table 1 tabulates a summary of twelve potential success factors and their rank according to frequency of citation in the selected studies. These potential CSFs were then used to refine and validate the next stage of research.

**Table 1.** Summary of selected studies on antecedents for CSR adoption.

No.	Potential Success Factor	Reference	Frequency	Rank
1.	Top management support	[14,55–57,61–72]	16	2
2.	Employees involvement	[57,58,64,69,71–75]	9	7
3.	Organizational culture	[57,61,62,67,75–77]	7	9
4.	Employees education and training	[55,61,63–65,69–74,78,79]	13	3
5.	Financial resources	[14,57,61,64,67–83]	20	1
6.	Human resources	[14,67,79,81,82,84]	6	10
7.	Managerial and internal skills	[55,56,64,65,72,77,79,85]	8	8
8.	Integrating CSR visions with organization’s strategy	[56,57,69,71,72,75,76,81,86–88]	11	5
9.	Participation of key stakeholders	[55,56,58,61,67,69,71,78,85,86,89,90]	12	4
10.	Government support	[67,69,71,74–76,83,86–88]	10	6
11.	Collaboration with strategic suppliers	[69,76,86]	3	12
12.	Monitoring and communicating of CSR activities	[14,61,63,73]	4	11

## 5. Research Methodology

Extant literature revealed that there is no universal CSFs identification method at present, and the selection of an appropriate method was based on the nature of the studies. For examples, Yang et al. [51] employed an empirical survey to assess CSFs for build–operate–transfer projects, Li et al. [52] used multiple methods to uncover CSFs for project planning and control in prefabrication housing production, and Olawumi and Chan [53] adopted a Delphi technique to investigate CSFs for building information modelling and sustainability practices. Considering all of the issues and the

nature of the current study, a Delphi technique was employed as the method of inquiries. By using this method, highly reliable data could be obtained from certified experts through the use of strategically designed surveys [91]. Most importantly, experts have emphasized the need for the CEM research to move from the traditional approach to the subjective methods that are more robust and rigorous, due to the transient nature of the construction industry [91,92]. The value of the Delphi technique to the CEM research is evident in its application. In a comprehensive review of 88 papers that employed the Delphi technique as the research method published in the first-tier CEM journals between 1990 and 2012, Ameyaw et al. [93] concluded that the technique is a robust and useful tool for identifying, evaluating, and forecasting purpose in areas of project planning and design, contracting, labor and personnel issues, and organizational issues in CEM research.

In addition, the CSR phenomenon in the Malaysian construction industry is relatively immature and yet to be clearly understood [14,94–97]. In a comparison study of CSR activities, references [67,98] concluded that Malaysian construction firms lag behind global construction firms in almost all aspects of CSR. The conclusion was that Malaysian construction firms have little knowledge on the concept of CSR, and what more, on how to practice it. In such an environment, Skulmosti et al. [99] asserted that a Delphi technique is well suited as a research instrument when there is incomplete knowledge and where there are no “correct” answers about a problem or phenomenon under study. The key to resolve these problems should draw upon the collective knowledge and experience of experts in a given area. Thus, the Delphi technique is seen to provide a more reliable and efficient alternative for solving these problems. Since the nature of the current study was to identify and rank the CSFs in order of importance, a ranking-type Delphi was employed. A ranking-type Delphi is valuable for the identification and ranking of key factors, items, or other types of issues [100].

As a guideline, at least two rounds of the Delphi process are required to allow feedback and revision of responses [93]. Considering the first round is the brainstorming round, the Delphi process for the current study was limited to three iterative rounds. The first round—the Delphi questionnaire—was developed from extant literature and consisted of two sections. The first section was about the expert’s background information, which aimed to confirm that they are experts in the field of study. The second section was a brainstorming section comprising both structured and open-ended questions. In the structured questionnaire, twelve potential success factors which were extracted from literature were included. The content of the section was explained clearly including a brief description of each of the listed items. Participants were instructed to identify the factors that they view as crucial for successful adoption of CSR in the construction industry, based on their expert opinion, by ticking the provided appropriate field. In addition, participants were also asked to list and describe any other factors that were not listed in the structured questionnaire but that they feel are also crucial to the successful adoption of CSR. Following the suggestion of Zahidy et al. [101], a pilot testing of all rounds of the Delphi process was conducted in advance of recruiting the full study. Three construction practitioners who complied as an expert and were experienced in the Delphi study were selected to test the effectiveness of the survey instrument. All logistical and technical issues regarding the survey instrument were resolved.

Gibson and Whittington [102] stressed the important of an interaction and feedback mechanism between industry practitioners and academicians in the construction industry best practices research. Thus, a heterogeneous group of two independent panels, namely construction industry practitioners (professional engineering consultants and contractors) and academicians was assembled. For CEM research, a panel size between eight and twenty participants is sufficient [93]. The list of the potential experts for the Malaysian construction industry practitioners was selected from the author’s and supervisors’ personal networking, while the list of potential academicians was abstracted from the local public universities’ official website. The criterion for being experts was that they should meet some set of pre-described requirements. These include:

1. Sufficient experience in the construction industry;
2. Involved in research and teaching on the topics related to CSR or sustainability or the construction industry;
3. Experience in sustainable development projects such as environmental impact assessment, green buildings, sustainable highway, industrial building systems, and others;
4. Hold a minimum of a bachelor's degree for respondents from the construction industry practitioners, master's degree for academia.

Twenty potential experts, ten from the construction industry practitioners' group and ten from the academicians' group, were identified and contacted via telephone call, asking their willingness to participate in the study. Following their verbal agreement, the official invitation letter and the participation consent form were sent out via email. It should be noted that the survey was not started until all participants returned the concerned forms, which complied to research ethics policy. Of the twenty potential experts, one construction industry practitioner declined to participate due to not being available in the country at the time of study. In addition, three academicians clarified they were not familiar with the topic under study since they are experts in different fields. As a result, consent emails were sent to the remaining sixteen nominees, consisting of nine construction industry practitioners and seven academicians. Since the experts were selected using purposive sampling on the basis of "closeness" to the topic under study, in that they represented different disciplines of the construction industry, they were able to provide a wide range of direct knowledge and experience to the decision-making process [103]. Hence, the panel size was deemed to be a suitable representation and sufficient for the composition of highly qualified expert panelists.

The consensus measurement is a critical aspect in the Delphi process. The principal aims of the Delphi study is to reach greater consensus amongst panelists and can be determined by measuring the variance in responses of Delphi panelists over rounds [99]. The consensus can be decided if a certain percentage of votes fall within a prescribed range [104]. In the CEM research, three techniques were commonly applied in measuring the consensus among the expert panelists including deviation, Kendall's coefficient of concordance ( $W$ ), and Chi-square ( $\chi^2$ ) [93]. Since the ranking-type Delphi was adopted for the current study, whereby a Likert scale is inappropriate to be used, the deviation and Chi-square ( $\chi^2$ ) techniques could not be employed. As an alternative, the current study adopted two different measures of consensus. In the first round, the consensus was assumed to be reached if the level of agreement on the particular factor becomes majority, that is, greater than 50%, as suggested by [105]. Then, the Kendall's coefficient of concordance ( $W$ ) technique was used to measure the convergence of rankings in the second and third rounds.

## 6. Results

### 6.1. Bias in the Delphi Process

Different from traditional methods, where the researcher presents the main bias, in the Delphi study the sources of bias are from the experts' judgments [106]. To minimize and control biases, the procedures suggested by Hallowell and Gambatese [93] were followed. These include:

1. The collective unconscious bias was addressed by requiring expert panelists to provide reasons if they change their opinion on the ranking of CSFs in the controlled feedback process of Delphi Round 3.
2. The contrast effect bias was minimized by randomizing the order of questions for each panel member and for each round. In addition, the collective group median was also reported in the controlled feedback process of Delphi Round 3.
3. The neglect of probability bias was addressed by independently recording the probability rankings and severity rankings for each CSF.



4. The Von Restorff effect bias was minimized by requiring expert panelists to provide reasons if they change their opinion on the ranking in the controlled feedback process of Delphi Round 3. In addition, the Delphi process was conducted in three successive rounds.
5. The myside effect bias was addressed by requiring expert panelists to provide reasons if they change their opinion on the ranking in the controlled feedback process in Delphi Round 3. In addition, the final ranking of the CSFs was reported as median.
6. The recency effect bias was minimized by conducting the Delphi process in three successive rounds, and the final ranking of the CSFs was reported as median. In addition, none of the expert panelists had been involved recently in events related to a similar study.
7. The primary effect bias was addressed by randomizing the order of questions for each panel member.
8. The dominance effect bias was addressed by treating expert panelists confidentially and anonymity.

### 6.2. Delphi Round 1

The Delphi questionnaires were emailed to the sixteen expert panelists who agreed to participate in the study. All sixteen experts returned the Round 1 questionnaire, representing 100% response rate. Table 2 shows the demographical characteristics of the expert panelists which confirmed that all of them comply with the criterion for being experts.

**Table 2.** Demographical characteristics of expert panelists on antecedents for CSR adoption.

Description		N	%	Description		N	%
Group	Consultant	5	31.25	Designation	Director	3	18.75
	Contractor	4	25.00		Principal	2	12.50
	Academician	7	43.75		Senior Engineer	2	12.50
Gender	Male	12	75.00	Town Planner	1	6.25	
	Female	4	25.00	Architect	1	6.25	
Age	21–30	4	25.00	Senior Lecturer	7	43.75	
	31–40	3	18.75	Experience in CSR	Yes	14	87.50
	41–50	2	12.50		No	2	12.50
	51–60	6	37.50	Industrial and Academic Experience	Consultant	122 years	
Over 60	1	6.25	Contractor		80 years		
Education	Bachelor	6	37.50		Academician	85 years	
	Master	4	25.00	Total	287 years		
	Doctorate	6	37.50	Average/expert	17.94 years		

Of the sixteen expert panelists, 43.75% ( $N = 7$ ) were academicians, 31.25% ( $N = 5$ ) were engineering consultants, and 25% ( $N = 4$ ) were contractors. The combination of practitioners from various disciplines of the Malaysian construction sector coupled with academicians from different Malaysian public universities make this study unique and should alleviate any biases that might occur in the findings of this study. The majority of the experts (75%) were male, indicating the nature of the Malaysian construction industry was dominated by males. A total of 37.5% of the experts were aged between 51–60 years old, 25% between 21–30 years old, 18.75% between 31–40 years old, 12.5% between 41–50 years old, and 6.25% over 60 years old. This output indicates that all the experts have a vast experience in the Malaysian construction sector. Of all the experts, 37.5% held a doctorate, 37.5% held a bachelor's degree, and the balance, 25%, held a master's degree. These outcomes were consistent with the suggestion of Zahidy et al. [101], who asserted that the experts' level of education qualification is one of the important attributes when selecting experts in the Delphi study.

The current designation held by the experts was that 47.35% were senior lecturers, 18.75% were directors of the firms, 12.5% were principals, 12.5% were senior engineers of the firms, 6.25% were

senior town planners, and 6.25% were senior architects. The outcome indicates that the experts covered various practitioners of the Malaysian construction sector. In addition, using a mixture of experts could eliminate biases of responses [101]. In addition, 87.5% of the experts had experience in CSR activities either officially or non-officially. Since the majority of the experts had experienced in CSR, their inputs could be considered as accurate and enabled valid findings to be drawn. Finally, the accumulated experience of the experts for both industrial and academic was 287 years at an average of 17.94 years per expert. In comparison, studies of Rajendran and Gambatese [107] and Agumba [108], within the construction industry, reported that the average experience of the experts was 15.5 years per expert and 14.9 years per expert, respectively, which are less than the current study. The findings confirmed that the expert panelists had vast experience in the issues under study. Most importantly, the composition of the experts recruited was of good quality to provide meaningful outcomes. Table 3 summarizes the findings of Delphi Round 1 as agreed by the expert panelists in terms of frequently cited and percentage.

**Table 3.** Consensus measures of Delphi Round 1.

Item	Critical Success Factor	N	%
1.	Financial resources	14	87.5
2.	Top management support	13	81.2
3.	Employees education and training on CSR	11	68.7
4.	Participation of key stakeholders in the CSR process	14	87.5
5.	Integrating CSR vision and initiatives with firm's strategy	9	56.2
6.	Government support	13	81.2
7.	Employees' involvement in the CSR process	11	68.7
8.	Managerial or internal skills on CSR	14	87.5
9.	Organizational culture	11	68.7
10.	Human resources †	8	50.0
11.	Monitoring and evaluating of the firm's CSR activities	13	81.2
12.	Strategic collaboration with suppliers	13	81.2

Note: † Did not reach consensus.

As one can see, the analysis of responses showed that eleven factors were agreed by expert panelists, for more than 50%, as critical for successful adoption of CSR in the Malaysian construction industry. These factors that reached the desired consensus were kept in the list. One factor, that is, human resources was selected by only 50% of the expert panelists as being critical for successful adoption of CSR in the Malaysian construction industry and thus was eliminated from the list. In addition, expert panelists suggested some other factors that he/she believed as critical to successful adoption of CSR in the Malaysian construction industry. All these factors were carefully reviewed based on the reasons provided by them and literature findings. It was noticed that some of the factors suggested by expert panelists were found consistent with that of initially listed factors. For example, internal and external support to CSR as suggested by the expert was consistent with top management support, participation of key stakeholders in the CSR process, government support, employees' involvement in the CSR process, and strategic collaboration with suppliers. Upon review, only four additional factors, namely national political stability, effective CSR communication, organizational structure, and national economic growth, were accepted and included in the Delphi Round 2 questionnaire.

### 6.3. Delphi Round 2

In Round 2, the Delphi questionnaires were emailed to the sixteen expert panelists who responded to the Round 1 survey. As a result, fourteen respondents returned the questionnaire, representing an 87.5% response rate. Two construction industry practitioners who did not respond in Round 2 provided current workloads as the reasons for doing so. In this round, respondents were asked to carefully review the fifteen CSFs and rank them in order of importance. Rank 1 representing the most

essential CSFs, and rank 15 representing the least essential CSFs. The data analysis was performed with the assistance of the Statistical Package for the Social Sciences software. Table 4 summarizes the descriptive statistics as a result of the Delphi Round 2 process.

**Table 4.** Group ranking of critical success factors (CSFs) for corporate social responsibility (CSR) adoption that emerged from Delphi Round 2.

Item	Critical Success Factor	Mean Rank	Group Rank
1.	Financial resources	1.46	1
2.	Top management support	3.21	2
3.	Employees education and training on CSR	7.50	4
4.	Participation of key stakeholders in the CSR process	7.64	7
5.	Integrating CSR vision and initiatives with firm's strategy	9.71	13
6.	Government support	8.54	9
7.	Employee involvement in the CSR process	9.50	11
8.	Managerial or internal skills on CSR	7.00	3
9.	Organizational culture	9.50	12
10.	Monitoring and evaluating of the firm's CSR activities	11.07	14
11.	Strategic collaboration with suppliers	13.00	15
12.	National political stability <sup>†</sup>	8.86	10
13.	Effective CSR communication <sup>†</sup>	7.50	6
14.	Organizational structure <sup>†</sup>	8.50	8
15.	National economic growth <sup>†</sup>	7.00	4

Note: <sup>†</sup> New factors emerged from Delphi Round 1.

Expert panelists generally agreed that Item 1 (financial resources) was the most essential CSF, having a mean rank of 1.46. It was followed by Item 2 (top management support) in second, with a mean rank of 3.21. Item 8 (managerial or internal skills on CSR) and Item 15 (national economic growth) were found to have a similar mean rank of 7.00. However, Item 8 (managerial or internal skills on CSR) was agreed by fourteen expert panelists in Delphi Round 1, representing 87.5% of agreements, whilst Item 15 (national economic growth) was a newly added factor suggested by expert panelists in Delphi Round 1. Thus, Item 8 (managerial or internal skills on CSR) was ranked in Rank 3 and Item 15 (national economic growth) in Rank 4. Similar reasons applied to Item 3 (employees' education and training on CSR) and Item 13 (effective CSR communication), which had a same mean of 7.50. It was also found that Item 7 (employee involvement in the CSR process) and Item 9 (organizational culture) had a similar mean of 9.50. However, Item 7 (employee involvement in the CSR process) was cited more frequently as the important factors for CSR practices compared to Item 9 (organizational culture), as shown in the findings of analysis of thirty-three selected studies previously discussed. Therefore, Item 7 (employee involvement in the CSR process) was listed in Rank 11 and Item 9 (organizational culture) in Rank 12. In addition, the convergence of rankings in Delphi Round 2, as measured by the Kendall's coefficient of concordance, was found to be 0.398, which indicated that Round 2 of the Delphi process achieved a weak convergence [109]. Since, a low level of consensus was reached by the panelists, the Delphi process continued to Round 3.

#### 6.4. Delphi Round 3

The Round 3 survey was the controlled feedback process of the Delphi study. The Delphi questionnaires were emailed to the fourteen expert panelists who responded to the Round 2 survey. All the fourteen respondents returned the questionnaire, representing a 100% response rate. Respondents were given an opportunity to review their previous ranking by considering opinions of others expert panelists. Respondents were asked to re-rank the CSFs, if desired. In doing so, the collective group ranking, mean, and median were provided together with their previous response in the Round 2 survey. Apparently, some expert panelists changed their minds in this round. Ten expert

panelists accepted the collective group's ranking, three maintained their previous rank, and one expert provided new rankings, either lower or higher, compared to the previous round. In particular, one expert changed his rank on Item 4 (participation of key stakeholders in the CSR process) from Rank 7 to Rank 6, and Item 14 (effective CSR communication) from Rank 6 to Rank 7. Table 5 summarizes the CSFs' group ranking based on the mean ranks resulting from Delphi Round 3.

**Table 5.** Group ranking of CSFs for CSR adoption emerged from Delphi Round 3.

Item	Critical Success Factor	Mean Rank	Group Rank
1.	Financial resources	1.14	1
2.	Top management support	2.29	2
3.	Employees education and training on CSR	5.43	5
4.	Participation of key stakeholders in the CSR process	6.86	6
5.	Integrating CSR vision and initiatives with firm's strategy	11.93	13
6.	Government support	8.93	9
7.	Employee involvement in the CSR process	10.36	11
8.	Managerial or internal skills on CSR	4.14	3
9.	Organizational culture	11.71	12
10.	Monitoring and evaluating of the firm's CSR activities	13.50	14
11.	Strategic collaboration with suppliers	14.14	15
12.	National political stability <sup>†</sup>	10.00	10
13.	Effective CSR communication <sup>†</sup>	7.14	7
14.	Organizational structure <sup>†</sup>	7.29	8
15.	National economic growth <sup>†</sup>	5.14	4

Note: <sup>†</sup> New factors emerged from Delphi Round 1.

Expert panelists generally agreed that Item 1 (financial resources) was the most essential CSF, having a mean rank of 1.14. Item 2 (top management support) was the second with a mean rank of 2.29. It was followed by Item 8 (managerial or internal skills on CSR) in third rank with a mean rank of 4.13, Item 15 (national economic growth) in fourth rank (5.14), and Item 3 (employees' education and training on CSR) in fifth rank (5.43). Item 11 (strategic collaboration with suppliers) was found to be the lowest rank of 15 (14.14). Analysis of responses revealed that the Kendall's coefficient of concordance, *W*, was increased to 0.784, from 0.398 in previous rounds. This indicated that Round 3 of the Delphi process achieved a strong agreement, achieved utilizing CSFs, which implies a high confidence in ranks [109]. The reaching of consensus by experts is a good indication that all the chosen success indicators were relevant in addressing the issues under study. Since a strong agreement on the CSFs was reached, the iteration round of the Delphi process was stopped as no further benefit could be derived from more Delphi rounds.

## 7. Discussion

The significant findings, revealed from the three successive rounds of the Delphi study, were that fifteen CSFs achieved consensus by the expert panelists. However, for practical implementation, organizational CSFs should be as few as possible [50]. Parmenter [110] suggested that organizational CSFs should be limited to between five and eight, regardless of the organization's size. Therefore, the validated model of CSFs for CSR adoption in the Malaysian construction industry was limited to the top eight factors ranked as highly regarded CSFs as suggested by the Delphi's panelists. Table 6 lists the eight CSFs for CSR adoption in the Malaysian construction firms in order of decreasing importance, and the rankings from literature (i.e., the findings of analysis of thirty-three selected studies discussed previously). The subsequent sections provide discussions on each of the CSFs pertaining evidence in literature or whether the findings appeared to be new contributions. It should be noted that the CSFs ranking from the literature review encompasses various sectors and countries, whereas the current study is limited to the context of the Malaysian construction industry.

**Table 6.** Final ranking of CSFs for CSR adoption in the Malaysian construction industry.

Item	Critical Success Factor	Delphi Rank	Literature Rank
1.	Financial resources	1	1
2.	Top management support	2	2
3.	Managerial or internal skills on CSR	3	8
4.	National economic growth <sup>†</sup>	4	-
5.	Employees' education and training on CSR	5	3
6.	Participation of key stakeholders in the CSR process	6	4
7.	Effective CSR communication <sup>†</sup>	7	-
8.	Organizational structure <sup>†</sup>	8	-

Note: <sup>†</sup> New factors suggested by expert panelists; Rank 1 is the most essential.

### 7.1. Financial Resources

Financial resources were the most essential factor regarded as a CSF for CSR adoption in the Malaysian construction industry, as shown by the findings from literature and the current study. It implies that financial resources could be generalized as the most crucial factor for CSR adoption regardless of industries or countries. The arriving of consensus on this factor is expected due to the charitable and discretionary behavior of CSR [111,112] which could incur an extra cost to the firm. The finding supports evidence found in literature that suggested a direct relationship between CSR and the availability of financial resources. Limited financial resources are said to hinder a firm's ability to make meaningful CSR investments, especially for younger and smaller firms [112]. A firm may increase their discretionary activities when their financial resources have increased [113]. On the other hand, financial constraints have been widely regarded as the primary barriers to CSR adoption in many difference countries and sectors [61,77,82]. Indeed, within the Malaysian construction industry, financial constraints have been reported as the main obstacles for CSR adoption [14,67]. The findings highlighted that the availability of financial resources is of paramount importance for the Malaysian construction firms if they desire to engage in CSR. It is suggested that Malaysian construction firms allocate a special fund for CSR activities. The size of the activities can be determined by the availability of this fund. It is also suggested to provide incentives such as allowance for staffs who are involved in CSR. However, it is most important to ensure such budgets do not further affect a firm's business operations.

### 7.2. Top Management Support

Top management support was the second highly regarded CSF for CSR adoption in the Malaysian construction industry, as shown by the findings from literature and the current study. This factor could be generalized as the crucial factor for CSR adoption regardless of industries or countries. Top management support is an essential factor in any organization and has been examined in various studies as one of the critical success factors. In the CEM literature, top management support has been found to positively contribute to project success [114,115]. This means that the more commitment of top management, the higher the level of any policies or practices to be successfully implemented in a construction organization. As noted by Phan et al. [116], top management of a firm is the sole authority in making the final decision on any strategies or policies of the firm. CSR is initiated in an organization as a strategic competitive tool and; therefore, CSR is a management tool and needs to be actively supported by the top management of the organization. They have a crucially significant role in formulating and implementing the CSR agenda in their organizations [117]. Their strategic actions help in building CSR images by signaling them clearly to the organizational audiences [118]. On the other hand, the absence of top management support is one of the primary barriers to CSR adoption in many countries and industries [70,72]. Indeed, a study within the Malaysian construction industry revealed the lack of support from top management was regarded as the critical obstacle to implementing CSR [14]. The finding highlighted that the effort of top management, especially the

director/owner, of a Malaysian construction firm is crucial if they intend to adopt a successful CSR agenda. It is suggested that top management demonstrates leadership and become role models to employees in promoting an ethical and moral behavior in the firm. It is also suggested to allocate responsibility for CSR implementation in the firm to a CSR management representative and establish key performance indicators for CSR activities.

### *7.3. Managerial or Internal Skills on CSR*

The greatest deviation from the literature was the relatively high importance given to managerial or internal skills on CSR by the Delphi panelists compared to those found in literature. It was ranked as the third highly regarded CSF for CSR adoption in the Malaysian construction industry, compared to eighth rank in literature. Although there existed great deviation, this factor still could be generalized as one of the crucial factors for CSR adoption regardless of industries or countries. One possible explanation on this deviation is that the findings from literature were from studies conducted in different countries and sectors whereby CSR has been practiced for a relatively long period and has been well understood. Therefore, managerial or internal skills on CSR were considered less essential for CSR adoption. On the other hand, Delphi panelists viewed that CSR was a new phenomenon in the Malaysian construction industry and; therefore, specific managerial skills are required particularly in embedding CSR into firms' strategies. Since CSR issues are not part of a routine job, every challenge in CSR requires its own approach, hence, managerial skills are crucial for designing appropriate approaches towards the realization of the CSR agenda [119]. According to Osagie et al. [120], there is a high risk involved if managers lack the skills on how to integrate CSR into business strategy, which implies in inability to create value for the firm and society. In addition, the findings have supported the evidence provided by Nadeem and Kakakhel [77] that lacking of managerial skills were among the main barriers to non-compliance to standard CSR activities in SMEs. It is suggested that the management of Malaysian construction firms should improve their managerial skills on formal CSR. It includes being prepared to take risks and seeking a new way to pursue and think about future CSR developments, as well as how those developments might affect the company's current CSR program [121].

### *7.4. National Economic Growth*

National economic growth was the fourth highly regarded CSF for CSR adoption in the Malaysian construction sector. This factor was the newly added factor as suggested by the Delphi panelists and; therefore, could not be compared with the findings from literature. The finding implies that national economic growth may be relevant in the context of the Malaysian construction sector. Nevertheless, the finding could be considered to have offered a significant contribution to the field. One possible explanation was that Delphi panelists considered the significant relationship between national economic growth and the Malaysian construction industry. In this sense, national economic growth is regarded as related to socio-economic developments [122]. Economic prosperity provided more development projects resulting in more chances for construction business. Consequently, more opportunity to gain profits is offered, hence, construction firms will be able to promote the CSR agenda. The finding supported the evidence provided by Ismail et al. [123] that level of national economic development is an important variable influencing CSR understanding and practices, especially in the developing countries. It was also consistent with the findings of van Scheers [124], who revealed a positive link between economic growth and SME success. It is suggested that Malaysian construction firms closely monitor the development of the national economy and immediately respond to any Government programs or policies on the construction sector.

### *7.5. Employees' Education and Training on CSR*

Employees' education and training on CSR was ranked as the fifth highly regarded CSF for CSR adoption in the Malaysian construction industry by the Delphi panelists, compared to third rank in

literature. Nevertheless, this factor could be considered as one of the crucial factors for CSR adoption regardless of industries and countries. In a knowledge-based society, employees, as the internal stakeholders of the firms, are the most important competitive factor of a company as they are the key determinant for any strategies adopted by the firm [125]. Since they are the most important internal stakeholder, they highly influence the CSR initiatives carried out by firms [126]. In addition, since CSR is not a routine job, employees who engage in CSR require specific skills and competencies to conduct CSR activities particularly important in the initial phases of the embedding process of CSR into a firm strategy [127]. Such competencies can be developed through education and training [128]. Evidence have suggested that investments in internal CSR, such as education and training, which intend to increase employees' technical and managerial skills and abilities, were associated with positive organizational outcomes such as performance [129,130]. On the other hand, lack of employees' education and training on CSR has been found as the leading factor to CSR poorly understood in many organizations, and has created challenges among CSR practitioners [12]. Therefore, it is suggested that Malaysian construction firms emphasize on human resources development. Employees who have directly engaged in CSR activities should be educated and trained to foster a strategic implementation of CSR. This includes providing specific training if they engage in more complicated CSR activities, and to the newly recruited staff as well.

#### *7.6. Participation of Key Stakeholders in the CSR Process*

Participation of key stakeholders in the CSR process was ranked as the sixth highly regarded CSF for CSR adoption in the Malaysian construction sector by the Delphi panelists, compared to fourth rank in literature. Thus, this factor could be generalized as one of the crucial factors for CSR adoption regardless of industries and countries. In today's business environment, engaging with stakeholders in terms of conveniently, transparently, authentically, and more frequently is no longer optional [131]. Indeed, in the construction industry sector, stakeholder management is one of the crucial factors related to project success [132,133]. Literature indicated that stakeholder engagement is an important aspect of an organization's CSR agenda. It can be viewed from three different perspectives. First, by participation of key stakeholders, firms are more transparent about their CSR activities and, in turn, able to maintain legitimacy and build a reputation in the marketplace [134]. Second, by participation of key stakeholders, the real needs of the society can be determined [135]. Third, by participation of key stakeholders, firms will be in a better position to anticipate stakeholders' satisfaction and, in turn, loyalty from the stakeholders are expected [136]. However, participation of key stakeholders in the CSR process should involve meaningful and structured dialogue to facilitate the exchange of views, feedback, and information between a firm and its stakeholders about its CSR agenda [137]. Thus, it is suggested that Malaysian construction firms improve their interactions and interrelationships between the key stakeholders, and at the same time ensure that all key stakeholders are involved in CSR decisions and activities.

#### *7.7. Effective CSR Communication*

Effective CSR communication was the seventh highly regarded CSF for CSR adoption in the Malaysian construction industry. This factor was the newly added factor as suggested by the Delphi panelists and; therefore, might only be relevant in the context of the Malaysian construction industry. One possible explanation was that the findings from literature were the studies conducted in other industries, such as manufacturing, automobile, and service sectors, where marketing efforts were the most important strategy for the businesses within the industries. Communication which includes CSR communication as one of the marketing strategies has been recognized as a formal and necessary practice in the firms [138]. Therefore, effective CSR communication as a part of marketing strategies was considered less essential for CSR adoption as it was already practiced in the firms. On the other hand, Delphi panelists viewed that CSR was a new phenomenon in the Malaysian construction sector, and; therefore, effective CSR communication was necessary to ensure returns from such efforts. Nevertheless,

the finding could be considered to have offered a significant contribution to the field. Although firms may be actively involved in CSR activities, nevertheless, such efforts may not have any impact on their business unless they effectively communicate them to their stakeholders [138]. From a marketing perspective, a right communication strategy is necessary to effectively influence consumer attitude and consumer behavior [139]. Consumers normally take into consideration firms' CSR activities when making purchase decisions, in that it either increases their purchase intention or makes them willing to pay higher prices for the firms' products and services [140]. Thus, perceptions of a firm's stance on CSR are influenced by its corporate marketing efforts including branding, reputation building, and communications [141]. This finding strongly supports the evidence provided by Abdullah and Aziz [142] whereby CSR antecedents emerged through formalization of corporate communication management in Malaysian organizations, which directly impacted corporate reputation. Thus, Malaysian construction firms should emphasize on CSR marketing. It could be done by developing a company's official website and, then, disclosing their CSR activities on this website.

### 7.8. Organizational Structure

Organizational structure was the eighth highly regarded CSF for CSR adoption in the Malaysian construction industry. This factor was the newly added factor as suggested by the Delphi panelists and; therefore, may only be relevant in the context of the Malaysian construction industry. One possible explanation was that the findings from literature were from studies conducted in large firms, where the firms are more formalized with specific organizational structure already in place, and; therefore, organizational structure was not considered as a crucial factor for CSR adoption. As compared to larger firms, small firms normally have less formal and flatter structures with no specific types [143]. Because CSR is related to a firm's performance, Delphi panelists viewed it as important for a construction firm to have a proper organizational structure in order to attain the intended goals. Organizational structure is considered as the formal framework within which works are divided, grouped, and coordinated [144]. It is the only way that the formal roles and responsibilities are assigned and interconnected [145]. The assumption is that if structure is appropriate, then all the processes and the relationships within the organization will occur effectively [146]. As a new practice in a firm, embedding CSR in an organization strategy is needed for organizational changes in order to promote its development and integration in business activities and processes. Indeed, research in the construction sector has shown the importance of the organizational structure in the context of the need to constantly deal with changes in the operating environment, which requires construction firms to manage their organization flexibility to stay viable in the business environment [147]. To ensure CSR is effectively embedded in firms' strategic planning, it is suggested that Malaysian construction firms adopt a more flexible organizational structure and also establish a specific department for CSR. This department should be headed by a CSR management representative.

## 8. Conclusions

The issue of CSR in the construction industry is extremely important because of the vital impact brought by the construction activities to the society and the environment. From a CSR perspective, businesses are the drivers that can construct a better world by minimizing the negative impacts brought by its activities, while at the same time maximizing the positive impacts by improving a wide range of societal and environment problems and contributing to the local community and society at large [15]. In addition, practice has shown that the CSR can be a source of competitive advantage for construction firms if correctly implemented. Although the discussion on the CSR concept has significantly increased and has become a popular research stream within the CEM research, there are still many aspects of the field remaining underdeveloped and questions remain unanswered. One of them is the issue on how to successfully adopted CSR into practice and, in turn, values for its adoption. A construction firm cannot build its CSR strategy without knowing what factors are crucial in order to successfully integrate CSR into their business strategies. It is anticipated that a better understanding of



these factors could pinpoint better strategies for CSR adoption in the Malaysian construction industry. To address the significant deficiencies in current CSR knowledge in the construction industry, this study attempted to understand the success measures on how to successfully adopt CSR in the Malaysian construction industry, with a specific focus on the CSFs underlying such efforts. Hence, identifying CSFs in advance will facilitate focused monitoring on only a few key areas of the CSR adoption effort, whereby construction firms will be able to achieve their mission on a consistent basis.

Through a literature search, a list of potential success factors were compiled. These factors were then refined and validated by an expert panel of sixteen Malaysian construction industry practitioners and academicians, through the use of the Delphi technique. After three iterative rounds of the Delphi process, expert panelists reached a consensus on eight CSFs for CSR adoption in the Malaysian construction industry. It could be safely concluded that successful adoption of CSR in the Malaysian construction industry depends upon these eight CSFs. An important aspect of the findings is that five of the CSFs, namely financial resources, top management support, managerial or internal skills on CSR, employees' education and training on CSR, and participation of key stakeholders in the CSR process, could be generalized as the CSFs for CSR adoption regardless of industries or countries, since they appeared to be consistent with the findings from literature. Three other CSFs, namely national economic growth, effective CSR communication, and organizational structure, could be considered to be relevant in the Malaysian context. The results provide useful managerial implications because, by considering CSFs, construction firms are guided and directed to a better understanding of how to obtain optimal performance from CSR and minimize the risk of failure.

This study contributes to the existing bodies of knowledge in several ways. The academic contributions were:

1. Represents one of the first studies of its kind focusing on CSFs for CSR adoption in the construction sector within the context of developing countries.
2. Conceptually and empirically examined the factors critical to the successful adoption of CSR in the Malaysian construction industry through the lens of CSFs theory. It is important to the existing literature, since none of the prior research addressed the CSFs for CSR adoption in the construction industry.
3. Provides new insights by addressing a theme that is less covered in the literature. As a corollary, the gap identified in literature will be partially filled with the outcomes of this study.
4. Employs a Delphi technique as a strategy of inquiries. It was used to respond to the call for subjective methods that are more robust and rigorous in addressing issues in the construction sector due to its transient nature.
5. From the research perspective, it is expected that the implications of this study could stimulate further interest in construction engineering management and CSR research.

Meanwhile, the industry contributions were:

1. Represents the first step of the CSR adoption process by uncovering the crucial factors that lead to successful CSR adoption. With such understanding, CSR will be able to be successfully adopted in line with the firm's strategic objectives and its internal characteristics.
2. Highlights the benefits of CSR in the construction industry, which addressed an ethical business philosophy. Consequently, the negative images of the sector could be eliminated, and enhance the credibility and reputation of the industry.
3. Provides a guideline for the Malaysian construction firms to consider the crucial factors that lead to successful adoption of CSR. By considering CSFs, a construction firm is guided and directed to a better understanding of how to obtain optimal performance from CSR and minimize the risk of failure.
4. Policy-makers could also consider the findings revealed from this study when promoting the CSR agenda or development programs that adhere to the construction industry's way forward.

5. Highlights CSR as a new approach, in regards to the ethical behaviour of a business, that can be used as a strategic competitive tool for construction firms to remain sustainable in business.

Whereas this study contributes to research by discussing a rather underdeveloped theme of CSR adoption research, there are some assumptions and limitations to be addressed. Therefore, the findings and conclusions need to be interpreted within the assumptions and limitations which are exploratory in nature. The primary assumptions behind this study were that the Malaysian construction sector practitioners who participated in the Delphi study were experts in the field, possessed the skills to communicate, and were honest and accurate in their responses and comments. Thus, it is assumed that the findings revealed from this study could contribute useful and valuable knowledge regarding the research issues.

Conversely, the limitations of the study include the fact that most of the measurement factors of the respective constructs were borrowed from cross-disciplinary studies and then re-contextualized in the construction engineering management field as a proxy. Therefore, it is acknowledged that the research findings are indicative but not conclusive. The fact that the study was conducted within the Malaysian construction sector implied that the results might generally be limited and cannot be universally generalized. However, the issue does not diminish the contribution of the study, as the general measurement variables under investigation used in this study were adequately identified and validated in other studies across broad geographical regions and various industries as well. The current work focused on the CSFs for CSR adoption in construction firms determined by a selected panel of Malaysian construction sector practitioners. It was an investigative process with the primary concern of accurately determining the CSFs. However, the study limitations reflect the restrictions on the study over which the author has no control. Therefore, the current study remained limited to the asynchronous feedback gathered from a selected group of panels.

The fact that the current study focused on limited measures of CSFs for CSR adoption in the Malaysian construction sector were from the results of the Delphi process and the literature review. The nature of a Delphi technique is to gain a better understanding of the issue under study based on the opinions of a selected group of expert panelists, particularly in the hopes of discerning possible directions for further research, and as such the results cannot necessarily be generalized or seen as the actual state matters in the field. Despite the use of the Delphi method, other constructive methods like observation or interviews with the construction sector practitioners could further assist in highlighting more significant results. The final limitation is the fact that it is likely that no individual is capable of identifying and quantifying all CSFs for CSR adoption, regardless of expertise.

It is practical to suggest possibilities for future research reflected from the limitations indicated in the above section. As noted by Jenkins and Smith [147], results from any Delphi study should be viewed as a beginning statement and not as a definitive work. Therefore, using this research as a platform, future research efforts should be able to support or refute the findings revealed from this study. For example, it is recommended to extend the findings of this study by conducting an empirical survey of the wider stakeholders of the construction sector. Nevertheless, it is important to insure that the respondents well understand the concept of CSR. One final suggestion is that future studies need to be conducted to test the generalizability of this study's findings across industries and sectors.

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