

Leading for Sustainability in the Brazilian Construction Industry

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Abstract

This article analyzes the major stakeholders in the Brazilian construction industry from the viewpoint of the companies in this sector, as well as how these organizations relate to their stakeholders with regard to the topic of sustainability in the construction. The study was based on the principle that the relationship with stakeholders is one of the foundations for the inception and continuity of activities toward sustainability. The findings of which show that the construction companies start the sustainability implementation process without the involvement of external stakeholders. This survey points out the difficulty faced by Brazilian construction companies in relating to their stakeholders. There is the perception that the customers and other actors do not value sustainability-oriented activities, but, at the same time, the relationship of the companies with these stakeholders is limited to disclosure of information. This characteristic of the industry reveals a need for sustainability projects that take into consideration, since their formulation, the stakeholders' perceptions. The importance of this article lies in the recognition that, although the topic of sustainability is discussed at all levels, studies that examine how specific construction industries have been dealing with it are still rare.

Keywords

Construction Industry, Sustainability, Environmental Challenges, Stakeholders

1. Introduction

In recent years, Brazil has been facing major economic, social and environmental challenges. Against this macro backdrop, specific industries are facing challenges associated with their activities, resulting in a growing trend in industry-related studies that seek to understand how sustainability is understood and applied. These studies help to capture

the specifics of each construction companies and understand how the comprehensive topic of sustainability is transformed into specific aspects of business management.

Sustainable development is defined as the kind of development that meets the needs of the present without compromising the ability of future generations to meet their own needs [1].

This perspective includes the idea that the current generation's needs are not limited to economic aspects, but also include social and environmental matters [2] [3].

In this context sustainability in the construction aims to meet present day needs for housing, working environments and infrastructure without compromising the ability of future generations to meet their own needs in times to come. It incorporates elements of economic efficiency, environmental performance and social responsibility and contributes to the greatest extent when architectural quality, technical innovation and transferability are included [4]. Sustainable construction is a way for the building and infrastructure industry to move towards achieving sustainable development, taking into account environmental, socioeconomic and cultural issue in which differing approaches, differing stakeholders and differing economic markets lead to different priorities [5].

Under this comprehensive concept, sustainable development can be interpreted in various manners by the different social actors that make use of this term, including companies [6]. Therefore, there is no fixed or defined way for construction companies to act on this topic; however, with the progress achieved by studies in this area, sustainability has become linked to various other terms, approaches and strategies adopted by organizations, which oftentimes emphasize the need to take the stakeholders into consideration. Freeman [7] defines a stakeholder as any group or individual that can affect or is affected by the organization's activities and purposes. According to this broad definition, it is possible to recognize a wide variety of stakeholders within an organization [8].

According to Elkington [5], in the process of implementing and structuring sustainability in a company, the involvement of and communication with the stakeholders that affect or are affected by the company's activities is required. Indeed, this is one of the main arguments presented by approaches aimed at understanding and applying sustainability in the business environment [9] [10].

Esquer-Peralta *et al.* [10] state that, when an organization decides to implement sustainability in its management, although the impacts vary according to its activities, there is greater communication and integration between the company's areas, an increased perception that the actions taken impact the environment, and a continuing search for improvement and efficiency in the processes and products offered, *i.e.*, a significant improvement in the relationship with a number of stakeholders.

For the purpose of operationalizing the concept of stakeholders in organizations and understanding which groups or individuals are actually worthy of attention, there are certain approaches that facilitate the stakeholder identification process, such as stakeholder mapping, or the identification of which stakeholders have power, legitimacy and urgency [8].

Because of the multiplicity of players that may be involved, and how the latter change according to the context or situation, many organizations get lost in the process of identifying and engaging players. In addition, the companies, frightened by the extent of the challenge posed by stakeholders, oftentimes believe they do not have the resources needed to promote communication and engagement [8].

As a matter of fact, without a clear-cut purpose, starting a process to identify and engage stakeholders is not feasible for companies [11] [12]. Many companies only carry out the process of engagement on a reactive basis, when specific projects cause problems in relation to certain groups of stakeholders [13].

Against this backdrop, this article intends to study how the relationship between the construction industry companies and their stakeholders is, at what point the stakeholders are involved, and which players are the most critical for the development of sustainability in these organizations.

2. Materials and Methods

In order to understand how the leaders of construction companies go about their efforts toward sustainability, a qualitative, descriptive and explanatory study was chosen [14]. The study will be conducted through in-depth interviews with multiple case studies.

The understanding of the relationship between stakeholders and Brazilian construction companies through a qualitative study is a significant contribution to the research in this area, since specific assessments of the topic under analysis are still in their early stages [15].

The study is descriptive, as it seeks to establish relationships between stakeholders and companies within a specific sample, by observing, examining, recording and describing these companies, without manipulating any data [16]. The explanatory characteristics lie in the fact that the study seeks to identify the factors that contribute to the identification of and relationship with certain sustainability stakeholders [16].

Qualitative studies can be conducted in a number of ways, among which case studies is one of the most widely used, especially in business administration and management studies [17]. Case studies may be defined as empirical descriptions of particular instances of a phenomenon that are typically based on a variety of data sources [18] [19].

In this study, the examination of multiple cases was considered the most suitable option, in view of the opportunity to “[...] clarify whether an emerging finding is simply idiosyncratic to a single case or consistently replicated by several cases” [19]. Therefore, we sought to establish correlations, patterns and repetitions among the subject matters of the study.

The data for this study has been collected through in-depth interviews, which are an efficient way of gathering rich, detailed empirical data [19] [20]. Lindolf and Taylor [21] state that in-depth interviews are occasions on which an interviewer encourages others to express their thoughts and experiences freely. According to Santana [22], this process enables us to gather insights from the interviewees, generating a collection of experiences and cognitions related to management for sustainability in the respondents’

organizations.

For conducting the interviews, a script was prepared, which describes the interviewee's characteristics and measures certain variables of the individual or group under analysis [23]. The script was prepared to have grand tour questions, *i.e.*, broad open-ended questions that allow the respondents to freely give what they consider to be the most suitable answer, sharing their most relevant experiences, and, therefore, removing the interviewer's influence [24]. The script was formulated to map out and understand how the implementation of corporate sustainability takes place, including questions referring to the identification of the organization's stakeholders and the company-stakeholder relationship.

The respondents were asked about the following topics related to sustainability:

- What are the main obstacles to sustainability in the construction industry?
- How sustainability was integrated into your company?
- What were the steps/initiatives taken by the company for the implementation of sustainability?
- What are the major sustainability players in the construction industry?
- What are your main stakeholders and how they are motivated to make sustainability oriented efforts?
- How stakeholders are maintained engaged in matters of sustainability?

The aim of the survey was to understand how the respondents interpret sustainability, and the steps they have taken to implement activities and actions aimed at sustainability. In addition, the study sought to understand who these companies are and understand they interact with their stakeholders, as well as the main challenges they have been facing while dealing with this topic.

The ten interviews were conducted and all the speeches were recorded and transcribed.

In qualitative research, the size of the sample is not consensual [25], which generates the need to assess the context and aim of the study, in order to determine criteria to define the sample. In the study at issue, the criterion of critical cases [21] [26] was used, *i.e.*, outstanding cases. We selected cases in which the leadership is clearly involved in the process of implementing and managing sustainability in the organization.

Although studies and initiatives to assess the Brazilian construction companies in terms of their commitment to sustainability already exist, these studies are still in their early stages, and, in general, do not specifically identify the organizations that are most developed with regard to this topic [27] [28]. However, in these study initiatives, one of the criteria used to determine high adherence to sustainability integration processes are formal and objective statements, such as the inclusion of the word sustainability in the organizations mission and values, as well as the obtaining of sustainability certifications, seals or audits [29] [30] [31]. Therefore, the respondents that make up the sample for this study had to be leaders of organizations that either met these criteria, or had already had experience with sustainability.

In order to identify the Brazilian organizations in the construction industry that met the aforementioned criteria, we elected to use as a sample companies included in the

CIBC Guide to Sustainability Practices in the Construction Industry. CBIC (Brazilian Chamber of Construction Industry) is the main entity that brings together companies of the construction industry, and is the national and international representative of the Brazilian construction industry and real estate market. The CIBC Guide to Sustainability Practices in the Construction Industry [32] is one of the various initiatives undertaken by this organization to contribute to the sustainable development of the Brazilian construction industry.

The guide contains examples of successful business initiatives focused on sustainability, with a view to providing guidance for companies seeking to adopt sustainable practices. These initiatives constitute the good practices and have been selected based on the following four criteria:

- 1) Good practices that embody a certain innovative aspect, or an aspect that has been little disseminated in the market;
- 2) Good practices that present an important matter related to sustainability in the production chain of the construction industry;
- 3) Good practices that can be well executed, bringing positive results for the company and its stakeholders;
- 4) Good practices that have the potential to be replicated by companies all over Brazil. [32].

In order to increase the likelihood of these practices being successfully replicated by other companies, successful experiences are reported in detail, together with a description of the "how to do it" steps. In addition, the benefits and knowledge obtained are presented, and each example is preceded by a brief introduction of the good practice at issue.

The good practices are organized according to the subject they address, which may refer to corporate management, the relationship with stakeholders, constructive process, health and safety, labor, and urban real estate development. The CIBC Guide has made significant contributions to the construction industry's discourse on sustainability, by creating a bridge between theory and practice, and directly relating to the companies' reality. This guide, in view of the important role it has played in the evolution of sustainability in the construction industry, has been chosen by researchers as the most appropriate source of companies committed to sustainability, and, therefore, companies to be contacted and interviewed to provide an understanding of how sustainability has been implemented in these organizations.

In total, 26 organizations were contacted, and ten interviews were conducted. **Table 1** provides details on the sample.

3. Results and Discussion

3.1. Process for Integrating Sustainability into the Construction Companies

Table 2 provides a summary of the sustainability integration process that has taken place in each organization examined.

Table 1. Information on the respondents and their companies.

#	Job	Main activities	Company size
1	CEO	Prefabricated items and manufacture of construction materials.	Large (+than 500 employees)
2	Administrative/Finance Superintendent	Geotechnical solutions	Large (+than 500 employees)
3	Sustainability Manager	Construction and real estate development	Large (+than 500 employees)
4	Safety, Health and Environment Executive Manager	Construction and real estate development	Large (+than 500 employees)
5	Construction Engineer and Quality System Manager	Construction and real estate development	Large (+than 500 employees)
6	Project Manager	Land subdivision projects	Medium-sized (from 50 to 99 employees)
7	Environmental Coordinator	Construction and real estate development	Large (+500 employees)
8	Officer	Consultancy on corporate sustainability and sustainable construction	Medium-sized (from 50 to 99 employees)
9	Engineering Officer	Construction and real estate development	Large (+500 employees)
10	Administrative Officer	Construction	Large (+500 employees)

Table 2. Process for integrating sustainability into the construction companies under analysis.

#	What were the first steps/initiatives taken by the company?	Consequences of the initiatives aimed at sustainability.
1	Creation of a housing solution with sustainable characteristics.	As a result of the initial success of the solution developed, sustainability became a requirement for the Product Development department.
2	A number of simultaneous initiatives: waste reuse; conscientious demolition; better use of the human potential in the company.	Implementation of a number of subsequent programs and processes: certifications in the area (ISSO and PBBQ-H); quality programs, workplace accident prevention programs etc.
3	Introduction of the goal of joining the Corporate Sustainability Index, and preparation of a sustainability report under the GRI standards.	A number of initiatives have arisen from the formulation of a strategy to address this subject, such as certifications, quality programs, workplace accident prevention etc. These initiatives stemmed from a Sustainability Committee, which mapped out the main requirements of its stakeholders.
4	Waste management pilot project.	After the initial success of the pilot project, the initiatives started to grow, involving occupational health; labor rights; actions to reduce environmental impacts etc.
5	Waste management pilot project.	After the start of waste management initiatives, a concern with quality arose, based on the idea that it was also necessary to ensure quality in relation to the environment, health and safety, and the community.
6	Attempt to understand the topic. Search for the best practices in the market, to understand how the company can incorporate sustainability aspects.	The topic has not yet evolved in the company.
7	Integration of sustainability into the company's vision, mission and values.	The management system was structured based on the certification that already existed in the company, ISO 9001, and was expanded through the inclusion of the scope of workplace health and safety.
8	The CEO observed large companies which are a benchmark in sustainability, and sought to understand how his company could integrate sustainability.	The company then started to internally follow the guidelines of the Global Compact, and to use the LEED standard in its projects. The company addresses this topic and engages its stakeholders in accordance with the international guidelines of the Global Compact.
9	The management and the quality, projects and production departments started to research benchmarks in the market.	The initiatives are integrated into the projects without there being a specific department in the company in charge of these matters. Sustainability aspects vary from project to project, based on the company's need.
10	The director pursued an MBA whose final project referred to reuse of materials. After that, the project arose in the company.	The aforementioned director is still striving to implement his ideas in the organization, and has been facing skepticism from the CEO and employees.

3.2. Major Sustainability Players in the Construction Industry

The respondents consider their clients, the government and the real estate developers to be the main stakeholders driving sustainability in the industry, followed by the company itself. There is a perception today that the client cannot yet see value in the sustainability actions taken by the companies of the real estate industry, and, consequently, they do not drive the demand for this type of initiative. Consequently, the government and business leaders come into play, and they must also organize and align themselves in order for sustainability-oriented efforts to be continuous and increasingly relevant (Table 3).

3.3. Main Obstacles to Sustainability in the Construction Industry

When the respondents were asked about the obstacles to sustainability in the industry, they gave varied answers, but it is possible to note a lack of knowledge on this topic by this population, as well as difficulty to pass on the added value of sustainability aspects to the end consumer. Since consumers are key players for sustainability in the construction industry, a change of behavior and culture is needed.

This finding is important because it shows that, regardless of the approach that is taken toward sustainability, the understanding of, and the relationship, interaction and dialogue with the consumers of sustainable products must play a key role. It should also be stressed that the lack of a culture aimed at sustainability impacts not only the demand for these products, but also their use throughout their useful lives.

Currently, there is a wide range of housing solutions in the market that take sustainability matters into consideration, but they depend on the end consumers for their potential to reduce the environmental impact to be tapped. If the end consumers do not

Table 3. Major sustainability players in the construction industry from the respondents' viewpoint.

Player	Number of respondents that cited
The Government	4
Clients	3
Real estate developers	3
The company itself	3
Leadership	2
Other companies in the industry	2
Employees	2
Society	2
Multinationals from other industries	1
Entrepreneurs	1
NGOs	1

have this perception, the industry alone cannot ensure the sustainability of its actions. Therefore, the results show a dissociation between the creation and production of sustainable products and solutions and the market and its use by the end consumers.

The lack of incentives from the government is also mentioned as an obstacle, and is part of the set of initiatives to change the Brazilian people's culture to embrace sustainability. This topic's agenda must be reinforced through greater incentives for innovation and organizations that operate in a sustainable manner (Table 4).

3.4. Main Stakeholders and How They Are Motivated in the Process

Each organization perceives its main stakeholders to be specific and that they may change over time; but, once again, the customer stands out in the answers given by the respondents. Therefore, we can see a dissociation between who is important, who motivates the sustainability process, and how this process takes place in organizations.

When asked about how sustainability was integrated into their companies, the respondents' answers indicated that, at first, this process focused on the leadership, or on legislations or contexts that drive organizations to implement strategies to address sustainability aspects. However, in only three answers can we see the leadership as an important stakeholder, which shows, on the one hand, the need to understand the extent to which the customers appear in the sustainability integration process, and, on the other hand, that even if we do identify the customers as key stakeholders for the organization, they are still not players in the process of stimulating sustainability (Table 5).

When we asked the respondents about how the stakeholders were motivated to make sustainability-oriented efforts, it was not possible to identify a trend. Only one organization mapped its stakeholders and demands, and, based on this process, came up with proposals to address the issues. The other organizations did not involve their stakeholders at first; they either involved them indirectly, or encouraged them to act in favor of sustainability through legislations.

The very lack of trends with this regard shows the need for a better reflection on the role of the main stakeholders in the sustainability integration process.

Table 4. Main obstacles to sustainability in the construction industry from the respondents' viewpoint.

Categories of analysis	Number of respondents that cited
Persuasion of the end consumer	3
Lack of incentives from the government	3
Lack of knowledge of the topic	2
Lack of engagement of the leadership	1
Higher costs	1
Legislation	1
The culture of the Brazilian people	1
The industry's culture	1

Table 5. Main stakeholders in the companies reviewed.

Categories of analysis	Number of respondents that cited
Customers	8
Employees	4
Suppliers	4
The Government	3
Leaders/ Leadership	3
Financing Agents	2
The community	2
The environment	1
Project designers	1
Shareholders	1
Population	1

3.5. Maintenance of the Stakeholders' Engagement in Sustainability Matters

The results show that the maintenance of the stakeholders' engagement in sustainability occurs through the disclosure of the results achieved through the initiatives; that is, through evidence that sustainability is worthwhile; by making this topic a routine within the organization; by seeking continuous partnerships and also through the development of new projects aimed at the sustainability issues faced by organizations.

Although the stakeholders are varied and may change over time, in general, the initiatives which keep them engaged aim to converse and interact with these parties, which can be either customers, shareholders, leaders, the government, or any other party (Table 6).

4. Conclusions

The results obtained reveal certain inconsistencies in the companies' relationship with their stakeholders. Even with the participation of a number of areas, the companies start the process without involving external parties; the companies that took part in the study started activities to address sustainability topics and aspects without any significant participation of their external stakeholders. This can be seen not only when we look at the process as a whole, but also when we consider specific issues, such as the main challenges and obstacles the companies face. When asked about their customers, the companies responded that persuading their customers that sustainability is advantageous is still a difficult task. There is isolation between the organizations that start the process and their external stakeholders. It is worth stressing that the companies included in the sample under analysis are benchmarks in sustainability-oriented activities, processes or products, according to the CBIC Guide to Good Practices.

The customers appear as major stakeholders for the industry, but, concomitantly, were not involved in the initial process for integrating sustainability into the compa-

Table 6. How companies maintain their stakeholders' engagement.

Categories of analysis	Number of respondents that cited
Through evidence that sustainability is worthwhile.	2
Through disclosure of results.	3
By making this topic a routine.	3
Through continuous partnerships.	1
Differentiated activities.	1

nies' management system. This gives rise to an incoherence between what the organizations do and the value perceived by the customers. Where do customers fit in the process? According to the interviews conducted, convincing the end consumer is one of the main obstacles to the advance of sustainability in the industry. This scenario indicates that it is necessary to improve the communication with and engagement of these stakeholders, as well as to understand how they relate to the gains sustainability may provide, even before actually taking sustainability integration actions.

In practice, the results reflect products and initiatives of the industry which do not necessarily meet the customers' needs, such as products with a lower environmental impact, but a higher maintenance cost, or developments that have green seals the consumers may not even be familiar with.

Certain recent approaches also criticize the view of studies that focus solely on the role of organizations to advance in the sustainability topic, including the engagement of and dialogue with end consumers. Consequently, there would be increased participation of customers and regulatory agencies in the process. Despite the criticism of analyses aimed at companies, it is important to note that, in fact, in subsequent studies of the industry and the development of the topic of sustainability, it is necessary to encourage more articulation between the government, the consumer and the companies in the industry. Without this alignment, there is no point in the organization spending resources to formulate a sustainability-oriented management system that is simply not supported by the regulatory agencies, and, above all, the consumers.

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