

Addressing Barriers to Integrate Social Sustainability in Construction Industry

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Abstract— The social, ecological, and financial scopes of sustainability are all influenced considerably by construction operations. Regardless of the fact that there is significant literature on financial and ecological sustainability, diminutive was done to investigate social sustainability in the building industry. In light of this, the goal of this research is to look at the major barriers to social sustainability in the Sri Lankan construction industry. The findings of this study may fill in the information gap about the barriers to social sustainability, and improve social sustainability practices in the construction industry. Expert interviews were performed using a complete literature review and a qualitative research technique. The findings were analysed using content analysis. The findings show three major barriers, namely, the lack of awareness of the concept, deficiency of government support, and stakeholders' conflicts of interest and divergent points of view. Sub-barriers were then discussed under each main barrier. Further, the solutions to overcome these barriers were discussed briefly to improve the social sustainability in the Sri Lankan construction industry.

Keywords: *social sustainability, barriers, construction industry*

I. INTRODUCTION

The interconnectedness and balance of the economic, ecological, and social aspects are key areas in sustainable development (UNCED 1992). Sustainability approach has prompted initiatives in construction sector to address financial and ecological concerns by reducing waste and energy consumption, as well as improving end-user satisfaction and protection of the environment (Liu, 2020). Nevertheless, a successful sustainable construction project must

consider social aspects as the project's impact on the broader society, as well as the safety, healthcare, and education of the workers. Implementing these elements will expand the project's continuing effectiveness and also the wellbeing for those who are impacted (Shirazi, 2017).

Social, environmental, and economic dimensions of sustainability are all influenced considerably by construction operations. As a result of the issue of the sustainable development goal, the demand for performance expected into building operations has risen. The construction industry has responded by supporting the sustainable progress goal and taking the social component into account throughout the course of a construction project's life cycle as an effect of increased awareness. The United Nations and other affiliates presented "Agenda 21 for sustainable building in developing nations," which has gotten the attention of the building sector (UNCED, 1992). The importance of social sustainability has grown throughout the project lifetime, including the design phases, building, operation, and deconstruction (Sierra & Pellicer, 2015). Numerous books and publications on sustainable construction and design have recognised the need of considering sustainability in all elements of the built environment. Interestingly, the focus of this work has always been on the environmental and economic components of sustainability, with little attention paid to the social components.

Sustainable development is the development that fulfills current requirements while not jeopardising future generations' capacity to achieve their individual requirements (Brundtland, 1987). Recent years, the notion of sustainability has gained widespread acceptance in the building sector. It is multifaceted, with

many aspects bringing to light distinct perspectives (Torku, 2017). The elements of sustainability are the social, environmental, economic, and cultural. When these components are included, the explanation of sustainability becomes complete. Sustainability has acquired widespread acceptability in the last few years on social, environmental, and economic concerns as a result of its positive influence (Saab & Sadick, 2018). Social sustainability, which has now been established mostly ignored in the conventional sustainability discussion, has recently attracted a lot of interest from construction professionals.

Employees, communities, customers, and the supply chain must all work together to guarantee that the requirements of present and future people and societies are met (Herd-Smith & Fewings, 2008). End-user concerns should be prioritised in a socially sustainable construction, as well as the influence on the wider community (Valdes-Vasquez & Klotz, 2013). In construction projects, social sustainability encompasses a wide variety of characteristics, including the management in construction workforce's comfort and well-being (Gatti, et al, 2012). As an effect, the security of construction workforces and construction communities must be addressed while attempting to integrate social sustainability into the construction sector. Many studies on social sustainability have recognised the procedures and the importance of including several key professions in its implementation (Paige & Thirukkumaran, 2018).

Poor knowledge of the notion of sustainability among construction employees, is one of the challenges to sustainability implementation in construction (Dzokoto & Dadzie, 2014). As a result of the lack of sustainability literacy among construction professionals, progress toward sustainability in building has been gradual (Shen et al., 2011). Studies on long-term impediments were confined to the opinions of consultants in general (Dzokoto & Dadzie, 2014). As a result, a thorough examination of the obstacles that impede the route to social sustainability should not be overlooked. In light of this, the aim of this research is to improve the social sustainability in construction industry. To achieve that, social sustainability has been defined from the view of construction industry and identified major barriers in socially sustainable construction

industry. Findings of this study may not only fill in the information gap about the barriers to social sustainability and to expand social sustainability practices in the Sri Lankan construction industry.

II. LITERATURE REVIEW

A. Social Sustainability

Having a solitary definition of social sustainability leads to more or even more complexity than achieving a common tactic, and that assign according to the idea that would lead to greater comprehension (Vallance, 2011). Further, they divide social sustainability under three categories as addressing challenges of poverty and injustice as part of development, support for strong environmental values in order to conserve the environment and conservation of social and cultural identities is referred to as maintenance.

In the study, McGuinn (2020) recommends the following definitions as appealing from the standpoint of systematic study;

- A society that is socially sustainable is one that is just, egalitarian, comprehensive, and fair, as well as one that offers a reasonable standard of living for present and future generations (Partridge, 2014)

- The term "social sustainability" refers to "society's orderly growth" (Shirazi, 2019)

- Accomplishing a reasonable level of social homogeneity, a balanced respect for tradition and innovation, employment that promotes the formation of decent livings, and equity in availability to services and financial services, as well as personal qualities, endogeneity, and self-confidence, are all significant elements of social sustainability (Adranghi, 2019)

- Social sustainability is a state that improves people's lives in communities, as well as a method that can help them attain it. (McKenzie, 2004)

Some of the essential characteristics of a socially sustainable system are justice in supply and distribution of options and chances, adequate delivery of social areas such as healthcare and educational, gender impartiality, and government responsibility and involvement (Kandachar,2014)

B. Social Sustainability and Construction Industry

Sustainability in the construction industry can be described as the goal of establishing a balance among a project's economic, environmental, and

social impacts. Specifically, a balance in terms of enhancing human lives through accomplishing economic and social objectives without causing environmental impact (Shi, Zuo, & Zillante, 2012).

Researchers define social sustainability as workforce, local community, customer, and supply chain participation in order to satisfy the requirements of present and future people and communities, a term that more accurately represents the many viewpoints of project stakeholders. (Herd-Smith & Fewings, 2008). Depending on the perception of the stakeholder as well as throughout the project, the notion of social sustainability has several implications in the sector. Because social sustainability is a multi-faceted perspective that is influenced by a variety of stakeholders, it necessitates an integrated approach from numerous stakeholders in order to achieve effective and optimal results (Almahmoud & Doloi, 2015). They go on to say that taking into account not just the impact of building projects on future users' lives, however a strategy to achieve social sustainability is to consider the effects during building, such as on workplace health and safety and job circumstances. Yet, it is important to highlight that the idea may be interpreted in a variety of ways in the construction industry, depending on the parties' points of view and wherever used within the project duration (Valdes-Vasquez & Klotz, 2013). As a result, rather than theoretical definitions, most of the research has focused on key criteria and indicators for operationalising social sustainability (Ahman, 2013).

People are at the heart of social sustainability. This term is defined differently in the construction area formed on the perspective of the stakeholders and where it is implemented within the life cycle of the project (Duxbury, 2017). Environmental impact evaluations, which are mandated by government agencies, usually include these figures. External stakeholders and governmental organisations employ community participation techniques like public hearings to influence design decisions at these early stages (Solitare 2005). While these social advantages may be elusive to contractors, they are just as important as environmental and economic ones, according to community experts (Hammer 2009). Since the idea of social sustainability is in

the developing stage, now is a great moment to start adopting the social sustainability procedures that must be implemented in building projects. (Valdes-vasquez, 2011)

C. Barriers to Integrate Social Sustainability

Barriers abound on the road to long-term sustainability (Bostrom, 2012). The following sections address the primary barriers and sub-barriers found in the literature under those primary barriers.

1) *Lack of awareness of the concept:* In the literature, there are many diverse explanations for sustainable progress, and there is still a lot of misperception and dispute about what it implies and sustainability is a broad, cross-cutting phrase characterized by significant tensions between competing goals (Ajmal, 2018). Below Table 1 summarizes the sub-barriers discovered under the major barrier of "lack of awareness of the concept."

Table 1. Lack of awareness of the concept barrier

Primary Barrier	Sub-barriers
Lack of awareness of the concept	Ignorance or misinterpretation of the impression of social sustainability (Ametepey, 2015)
	Social Sustainability is misunderstood due to a deficiency of knowledge of the dynamics (Ametepey, 2015)
	The lack of education of stakeholders (Fujii, 2006)
	Other relevant experts are unaware of the situation (Ayarkwa et al., 2017)
	Insufficient ICT knowledge and abilities for facilitating work procedures and information searches (Ametepey, 2015)
	Inadequate technical knowledge (Ametepey, 2015)

2) *Lack of government support:* At the international, national, and community level, sustainable development necessitates concurrent changes in the configuration of social and political factors (Cerna, 2013). Anyway, this is a complicated procedure that necessitates cultural transformation, and numerous

intentional treaties have been grasped, notably prior to and during the Rio Summit, but governmental resolve to implement them has been sporadic. (Blair, 2005). The sub-barriers found under the primary barrier of "Lack of government support" are summarized in Table 2.

3) *Stakeholders' conflicts of interest and divergent points of view*: Divergent perspectives and conflicts of interest among stakeholders are the primary reasons of inadequate practices in social sustainability and this has prompted concerns about the efficiency in achieving long-term growth of social sustainability (George, 2017). Because every stakeholder does have a personal interest within the project this can lead to divergent priorities, disputes, and a substantial rise in the situation's complexity (Karlsen, 2008). Table 3 summarises the sub-barriers discovered under the major barrier of "stakeholders' conflicts of interest and divergent points of view."

Table 2. Lack of government support barrier

Primary Barrier	Sub-barriers
Lack of government support	Building codes on sustainability are lacking (Ametepey, 2015)
	Concerns about politics and policy (Emuze, 2015)
	Government policies and assistance are lacking (Ayarkwa et al., 2017)
	Design tools' complexity and limits (Crane, 2008)
	Public policy and rules clash (Ahn et al., 2013)

Table 3. Stakeholders' conflicts of interest and divergent points of view barrier

Primary Barrier	Sub-barriers
Stakeholders' conflicts of interest and divergent points of view	Apprehension over rising investment expenses (Ametepey, 2015)
	Client expectations are increasing due to the growing complication of modern construction projects (Ametepey (2015)

	Inadequate professionals (Ayarkwa et al., 2017)
	The organization's size and operations are diversified (Ayarkwa et al., 2017)
	Managing sustainability with other company goals is difficult (Ayarkwa et al., 2017)
	Competition (Häkkinen & Belloni, 2011)

III.METHODOLOGY

Through journals, conference papers, books, and dissertations, a comprehensive analysis of the literature was conducted, followed by moderately interviews, to recognise the idea of social sustainability within building construction industry and also to explore the major barriers associated with adopting social sustainable practices in construction sector. To fulfill the research's goal, the literature was evaluated using previously identified theoretical facts and practical factors relevant to the study issue from existing literature. Critical literature evaluation is an important element of any research project, since it allows for the development and refinement of study objectives.

To achieve the research's goals, semi-structured interviews with ten experts in the field were used as a data collecting strategy. On the basis of their exposure to sustainability, experienced experts from the construction sector were selected and interviewed. Defining the social sustainability in the context of construction industry, and the key barriers to implementing social sustainability procedures in Sri Lanka, were explored through this study. The data was examined using content analysis as the method of data analysis. The key impediments to implementing socially sustainable practices in the construction sector, were investigated.

A. Interviewee profile for expert interviews

A brief summary of the ten interviews is presented in Table 4 as follows;

Table 4. Interviewee's profile

Interviewee	Profession	Experience
E01	Chartered Quantity Surveyor	25 years

E02	Chartered Quantity Surveyor	15 years
E03	Quantity Surveyor	12 years
E04	Civil Engineer	10 years
E05	Quantity Surveyor	09 years
E06	Chartered Architect	16 years
E07	Civil Engineer	14 years
E08	Chartered Architect	13 years
E09	Quantity Surveyor	10 years
E10	Project Manager	20 years

IV. RESULTS AND DISCUSSION

Social barriers, unlike economic and environmental barriers, are difficult to identify, choose, and quantify, according to all experts. It's tough to figure out what improvements are needed because of the ambiguous socio-related elements and their prejudice, along with differing perspectives and objectives as indicated by E10.

As per the experts and literature findings, impediment to the embracing of social sustainability was identified as a deficiency of education and understanding about the subject. E01, E02, E03, E05 and E09 insisted that sustainability can't be accomplished without expertise or awareness of experts, given the complex, dynamic, and difficult character of building projects. Ignorance or a lack of shared knowledge of sustainability might stymie social sustainability in building. Obstacles arising from a lack of knowledge, according to all experts, are a regular occurrence for most stakeholders in the building business. Deliberate development in providing sustainable growth has been attributed to a deficiency of experts in sustainability, and results approve these issues as challenges in the practices used by stakeholders to guarantee social sustainability.

Accomplishment of sustainable building is contingent on good government procedures and assistance, which would stymie the process if not provided. Majority of experts say that the lack of sustainability-related building regulations, deficiency of government pledges, and absence of legislation are all major barriers to achieving social sustainability in construction. The government's commitment and the development of legislation are crucial to the accomplishment of social sustainability in building.

As indicated by E07, Sri Lankan construction sector has a long history of functioning in a certain manner, and it has a reputation for being

tough to change. E07 further commented that the stakeholders have little desire for sustainability because of this aversion to change where all the other experts agreed. According to all experts, a key stumbling barrier is stakeholders' lack of desire for sustainability. The most critical barrier, according to all experts, is that a building project cannot be carried out sustainably without the complete backing of the client, contractor, and other stakeholders for sustainable principles.

The majority of expert interviewees (E01, E02, E03, E04, E05, E06, E08, E09 and E10) felt that organisations' lack of contribution to social sustainability practices has had a detrimental influence on implementation of social sustainability practices in real life. To that E07 added bringing stakeholders together, resulting in societal concerns that must be addressed in accordance with sustainability standards in construction industry. According to all experts, a key barrier to integrating social sustainability is a lack of organisational support. Furthermore, organisations view social sustainability practices as an add-on task that falls outside of their normal area of business. According to E01 and E02, some firms aim to pull the competitive market to promote their companies by implementing sustainable concepts, while others implement sustainable concepts through corporate social responsibility programs. As a result, those firms do not intend to be long-term viable.

In light of these considerations, all the experts emphasise the need for solutions of social sustainability improvement centered on universal co-responsibility norms and innovative deliberative techniques to satisfy opposing interests and economic and governmental regulatory mechanisms' constraints. All the experts further expressed these solutions should have a decision-making procedure focused on discussion, mediation, and transition management, rather than the existing voting and negotiation approach. The following suggestions were made by the experts in order to incorporate social sustainability into the building sector.

- Addressing all important stakeholders and linking them to various sustainability-related goals.
- System innovation provides a path to obtaining long-term advantages. To address the corporate and public sectors' long-term

sustainability objectives and short-term ambitions, "transition management" is necessary.

- Firms of the Future: As evidenced by the rising number of green consumers, the companies of the future will begin to integrate longstanding forecasting into their principal business. As a result, every organisation must establish transparent long-term goals.

- Increased public discourse throughout all levels to establish a link between the system and its subsystems – science, policies, law and the policymaking procedure in the building sector.

- Constitutional or structural political transformation is necessary to allow for new kinds of community discourse and the expansion of transcendental science and technology evaluation methods.

- Sustainability is a complicated structure characterised by logical ambiguity and inexperience. There is a case to be made for an innovative sort of tools to aid in the even integration of research. A new tool to evaluate the quality of data than the veracity inside each scientific report.

- As a starting point, design that is methodical and is based on expertise objectives will aid in the discovery of a mutual ground among scientific and policy levels. Considered methods, for instance the use of the cautionary principle, aid in the development of agreement on such goals.

V. CONCLUSION AND RECOMMENDATIONS

Social sustainability has lately garnered a lot of attention from across the world in order to adopt sustainability in the building sector. Meanwhile, in nations like Sri Lanka, the discipline of social sustainability is still in its infancy and confronts significant challenges. These barriers must be overcome in order to develop successful and widespread social sustainability practices in building industry. To that end, the goal of this research was to look at the obstacles to social sustainability. Barriers were identified by a complete literature study and expert interview to accomplish the aim. Lack of understanding in concept of social sustainability, lack of government backing and stakeholders' conflicts of interest and divergent points of view were identified as key barriers based on the findings. To attain the objective of social sustainability, experts recommended to facilitate a seamless integration of public requirements, as well as encouraging public engagement, maximising

policy and scientific evidence, to guarantee a high quality decision-making process, substantial use of new techniques such as the precautionary principle, involvement of stakeholders to improve a participative approach, encourage the creation of suitable institutional frameworks and most importantly to consider the impact on the current social structure. This study paves the way for future research as developing initiatives to improve social sustainability in Sri Lanka.

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