Review

Social Sustainability in Construction Projects—A Systematic Review of Assessment Indicators and Taxonomy

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Abstract: Despite its importance and appeal, the social dimension of sustainability in construction projects is less explored and lacks a comprehensive and standardized framework. This diminishes the holistic view of sustainability. The existing customized frameworks make the selection of factors challenging across different contexts. Eventually, the practitioners have to pick and choose the factors. This reduces the reliability of social sustainability assessments and makes them a procedural challenge. To fill this gap, the current review synthesizes a framework of social sustainability for construction projects. For this purpose, a systematic review of the literature published until 2021 is performed. The indicators are extracted from the selected 22 papers and their content is analyzed to check for similarities. The final set of 76 factors is synthesized into an assessment framework through a thematic analysis based on a bottom-up approach. The framework is organized into 7 enablers or themes, 27 indicators, and 76 sub-indicators. The enablers of social sustainability are stakeholder, safety and health, human resource development, project, industry, community, and government. The framework provides a comprehensive and precise view of social sustainability which can be leveraged to ensure better planning and sustainable development of construction projects.

Keywords: social sustainability; construction projects; framework; systematic literature review; thematic analysis; content analysis

1. Introduction and Background

Social sustainability is often the vaguest and least explicit dimension in practical attempts to shape sustainable development [1]. This is partly because social sustainability is a soft aspect of sustainable development, and its assessment has always posed practical challenges for experts [2–5]. To ensure long-term sustainability, it is critical to manage natural and social capital, not only economic capital [6]. Social sustainability is approached from the perspective of one of its ingredients, namely social acceptance [7]. The benefits of socially sustainable development may be returned in numerous ways, such as the creation of jobs and improved quality of life [8].

Within the holistic view, social sustainability aims to respond to the needs of people at every stage of involvement in the construction process (from commissioning to demolition), provide high customer satisfaction, and work closely with clients, suppliers, employees, and local communities [9]. A sustainable construction project should have social considerations for stakeholders and the end users, the influence of the project on the surrounding community, and the health, safety, and education of employees. Integrating these factors will enhance both the long-term project efficiency and the quality of life of those impacted by the project [10]. Like sustainable development, social sustainability is also a complex phenomenon and its assessment has remained challenging due to its subjective, qualitative, and contextual nature [11]. One of the promising assessment strategies is to break down this complex concept into smaller, more manageable, and realistically measurable variables, also called indicators, and organize them into an assessment framework [12,13]. But in the
absence of a standardized assessment framework, like those available for environmental or economic sustainability, the assessment of social sustainability has remained elusive and subjective [14]. Various environmental sustainability assessment frameworks and movements have been suggested and adopted, including the EcoDistrict approach. These frameworks generate relevant information about the sustainability of regions [15,16]. The assessment of environmental sustainability is also carried out using the CML-IA (v.3.03) method, which has 11 baseline indicators. CML is the most commonly used life cycle impact assessment (LCIA) method (ISO, 2000) [17–19]. Moreover, Wang et al. [20] selected 28 environmental sustainability indicators based on the SDGs. They used a CES model to assess environmental sustainability at China’s national and provincial levels [20]. Ahmad and Thaheem [21] proposed an economic sustainability framework for residential buildings that considered life cycle cost to be a “traditional indicator”, while they characterized affordability, adaptability, and manageability factors as “non-traditional indicators”.

Some seminal studies have investigated various factors affecting social sustainability in construction projects. Some studies focused on a single factor affecting social sustainability in construction projects such as stakeholder [22,23], safety [8,24], and community involvement [25,26]. For instance, Toole and Carpenter [8] provided an overview of the prevention through design (also known as design for construction safety) concept and suggested that it should be a prerequisite for social equity in capital construction projects. Also, Doloi [23] evaluated social values in infrastructure projects by analyzing the influence of stakeholders and the impact of the project on society.

On the other hand, some studies have investigated multiple factors affecting social sustainability in construction projects. For example, Nasirzadeh et al. [1] modeled a wide range of factors affecting the social sustainability performance of construction projects, taking into account their complex interactions. Moreover, Stender and Walter [27] developed a framework involving 12 indicators grouped into three overarching themes: social cohesion, participatory processes, and accessibility to living opportunities. Social sustainability can only be understood by examining the whole system in which the problem occurs and how different various influencing factors interact [28].

1.1. Knowledge Gap

Several previous studies have developed assessment frameworks, some of which are fractional and focused on particular areas of social sustainability [29–31]. For example, Li et al. [32] provided a breakdown of multi-stakeholder-related social sustainability, whereas Doloi [23] provided a community-specific social sustainability assessment framework. These frameworks focus on particular areas of social sustainability. Though this approach provides a deeper insight into a chosen area of focus, it does not offer a comprehensive social sustainability breakdown into objectively measurable and highly reliable taxonomy. This unavailability puts researchers, policymakers, and practitioners in a tight spot; they have to imagine and expand on the possible hierarchies of social sustainability to achieve an accurate and representative assessment of the social implications of a construction project.

Due to this guessing game, not all aspects of social sustainability are included, and some major aspects run the risk of being neglected because of the verifiable, limited space-time perspectives and considerations of the concerned decision-makers. Also, this unavailability puts extra work on the practitioners and decision-makers of sourcing the existing frameworks and gathering a detailed, reliable, and generalizable breakdown of social sustainability.

Some very recent studies have attempted this task. For example, Goel et al. [33] developed a framework of social sustainability and construction project management. Their framework includes three layers of social sustainability characteristics, six identified areas of social sustainability integration in construction project management, and the project lifecycle. They only focused on the managerial aspects of construction projects through the lens of stakeholders. Further, Fatourehchi and Zarghami [34] developed an
assessment framework for managing sustainable construction in residential buildings. They investigated the social sustainability indicators through a multi-criteria decision-making approach and obtained criteria priorities through local experts.

These frameworks have advanced the body of knowledge by providing a useful synthesis of social sustainability assessment. However, their inherent limitations of coverage and focus justify more effort in this direction.

1.2. Research Goal

A comprehensive framework for construction projects can act as a foundation to achieve more sustainable projects and advance the research in this direction. Surely, such a framework does not disregard all the focused and specialized work performed by the existing frameworks; it merely offers a one-stop solution to the assessment of social sustainability in construction projects.

Therefore, this review explores the research on social sustainability in construction projects. It highlights the development of frameworks, their focus and limitations, and the applications of their findings. Using the synthesized factors, it develops a comprehensive framework of social sustainability in construction projects through thematic analysis. In doing so, it identifies, extracts, and categorizes into themes the different contributors to social sustainability. Identification of the criteria for measuring the social sustainability performance of construction projects is particularly highlighted. Moreover, to improve the assessment, the framework contains a measurement unit for all the contributors over a five-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). Finally, the relevant project phase or phases for each contributor are mentioned to help better operationalize the social sustainability assessment. These phases are strictly following PMBOK guides project lifecycle phases and they mainly deal with project implementation. The standard PMBOK lifecycle for the project is used where the initiation is pre-implementation. These phases are intended to relate to the entire project life cycle as given in the PMBOK guide (initiating, planning, executing, monitoring and controlling, and closure). Post-implementation has been excluded in this paper. The outcomes of this research may have a significant impact on the improvement of social sustainability in construction projects through a holistic approach to investigating the influencing factors.

2. Review Methodology

The tradition of developing frameworks by synthesizing published factors and variables is not new in the literature. This method is popular since it allows one to stand on the shoulders of giants by leveraging on the existing research. It helps draw a holistic picture and configure a comprehensive set of factors into a framework. In the field of sustainability, where this trend is recent as evidenced by a majority of the retrieved papers published between 2017 to 2021, the systematic literature review is a dominant method for reviewing the papers and synthesizing the frameworks. For example, Koke and Moehler [35] used two systematic literature reviews to develop the conceptual framework for earned green value management to act as the theoretical groundwork for a new project management tool to track the attainment of sustainability goals in projects.

To achieve the goal of this study, a systematic literature review is performed. In doing so, journal papers published until 2021 in the area of social sustainability in the construction industry were reviewed to extract the relevant indicators. For this purpose, a qualitative meta-analysis of high-quality literature is carried out that offers an overview of the research environment in this field. It enables researchers to make findings relevant to the literature that would not be possible by other approaches [36]. The purpose of a systematic literature review is to provide an overall image of the research environment in a specific area. Systematic reviews remain at the top of the “hierarchy of facts” above all other research designs, since they can have the most important functional consequences [37].
2.1. Searching and Sourcing Relevant Literature

As detailed in Table 1 and graphically shown in Figure 1, the core collection of Scopus was searched in the first step with the search string of (“social sustainability” and “construction industry” or “construction project” or “construction management” or “project management” or “infrastructure project”) in titles+keywords+abstract. The Scopus platform was selected due to its higher journal coverage than similar databases [38]. It guarantees high-quality peer-reviewed articles, rigorous inclusion criteria and indexing processes, availability of more recent publications, and also provides a reproducible process [39].

Table 1. Search strings, restrictions, and results.

| Search Engine | Strings and Refinements | Results |
|---------------|-------------------------|---------|
| Scopus        | (TITLE-ABS-KEY (“social sustainability”) AND TITLE-ABS-KEY (“construction industry”) OR TITLE-ABS-KEY (“construction project”) OR TITLE-ABS-KEY (“construction management”) OR TITLE-ABS-KEY (“project management”) OR TITLE-ABS-KEY (“infrastructure project”)) AND PUBYEAR <2022 | 177     |
|               | AND (LIMIT-TO (“journal”)) | 112     |
|               | AND (Screening of titles/abstract/full text) | 94      |
|               | AND (Content analysis) | 52      |
|               | AND (Second step screening) | 28      |

Figure 1. Literature review process.

Using the mentioned search query, 112 journal papers were found and an initial screening of their relevance helped eliminate the remaining papers. The relevance was determined by two criteria: (i) specific focus on social sustainability; (ii) area of application within the construction and built environment sectors. Papers not meeting the first criterion...
and targeting sustainability at large were removed. Similarly, papers not meeting the second criterion and targeting diverse areas of application excluding construction and built environment were removed. The remaining 94 papers were retrieved and thoroughly studied to ensure that they address the central research topic. In doing so, the entire content of these papers was read to choose suitable articles as per their relevance to the research topic. It was found that these papers can be largely distributed into two groups: social sustainability in construction projects and social sustainability in urban and regional planning. Based on the focus of this study, the final selection was reduced to 52 papers in which social sustainability in construction projects is investigated. The findings are based on the synthesis of these papers where one or more influencing factors of social sustainability are discussed, whereas the papers on urban and regional research were removed.

The shortlisted 52 research papers were carefully read to identify papers covering more than one factor. The purpose of this screening was to ensure broad coverage of factors. In doing so, papers addressing more than one factor were included and those addressing only one factor were excluded. For example, Toole and Carpenter [8], which discussed safety as a sole factor, was removed since the same factor has been discussed by Valdes-Vasquez and Klotz [10] and Nasirzadeh et al. [1] along with several other factors providing broader coverage.

The papers were carefully read to not only extract the factors but also understand their context. Therefore, the identified factors of safety in all the papers were pointing to the same macro area. Moreover, careful observation of the focus of each study reveals that papers with limited focus only cater to stakeholders or the community as the ends, and other areas of social sustainability are treated more like functions or a means to achieve social sustainability for the community or stakeholders. This presents a micro and narrow view. Thus, to achieve a more inclusive view of social sustainability, the second step of the screening helped reduce the number of papers from 52 to 28. These papers represent broad geographical origins and contexts, as shown in Table 2. The papers excluded at this stage, though relevant and valuable, were largely uni-focused. Some examples include [26] which explore the factor of the national culture impacting social sustainability.

Table 2. Selected papers for framework development.

| Authors                     | Focus of Study | Study Location | Context      | Approach                                                                 |
|-----------------------------|----------------|----------------|--------------|--------------------------------------------------------------------------|
| Zuo et al. [40]             | Stakeholder    |                | Construction | A qualitative approach was used and semi-structured interviews of 16 industry professionals were conducted. |
| Doloi [41]                  | Stakeholder    | Australia      | Infrastructure | A quantitative approach was used. A university building case study was run and a questionnaire survey of 25 respondents was performed. |
| Valdes-Vasquez and Klotz [10] | Wide-ranging framework with a focus on the planning and design phases | USA | Construction | A quantitative approach was used along with performing a questionnaire survey of 25 experts in academia, industry, and government. |
| Chasey and Agrawal [42]     | Wide-ranging framework | USA | Construction | A qualitative approach was used, and a case study in the Advanced Technology Facility Sector was used. |
| Almahmoud and Doloi [31]    | Stakeholder    | Saudi Arabia   | Construction | A quantitative approach was used. A building project was used as a case study. Also, a questionnaire survey of 20 experts across the project was performed. |
| Valentin and Bogus [5]      | Wide-ranging framework | USA | Building and infrastructure projects | A qualitative approach was used, and eight case studies of building and infrastructure projects were used. |
| Authors                     | Focus of Study             | Study Location | Context                  | Approach                                                                                                                                                                                                 |
|----------------------------|----------------------------|----------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ahmad and Thaheem [21]     | Wide-ranging framework     | Pakistan       | Residential building     | A mixed-method approach was used. A case study of a low-rise residential building was used. Besides, a questionnaire survey of 66 respondents from research and education disciplines was conducted.                  |
| Rohman et al. [30]         | Community                  | Indonesia      | Toll road project        | A quantitative approach was used. A toll road project was used as a case study. 206 respondents from three stakeholder groups (government, private, and end-users communities) were surveyed.                    |
| Doloi [23]                 | Community                  | Australia      | Infrastructure           | A quantitative approach was used. A toll road project in Melbourne was used as a case study. A questionnaire survey was also performed on 25 respondents.                                                |
| Hossain et al. [43]        | Construction materials     | Hong Kong      | Construction material    | A mixed-method approach was used. And a case study on construction materials was conducted. A case-specific survey was performed through 40 responses.                                                                 |
| Karji et al. [44]          | Wide-ranging framework     | Iran           | Mass housing             | A quantitative approach was used. A Mehr Housing Project in Iran was used as a case study. A two-stage questionnaire survey was performed by collecting 128 and 62 responses from the residents of the project and the construction industry experts, respectively. |
| Kumar and Anbanandam [13]  | Wide-ranging framework     | India          | Freight infrastructure   | A quantitative approach was used. An Indian freight transportation project was used as a case study. A questionnaire survey was also performed on 8 experts.                                                                 |
| Hendiani and Bagherpour [12]| Wide-ranging framework     | -              | Construction             | A quantitative approach was used. A questionnaire survey was also performed by participating 7 experts.                                                                                                   |
| Nasirzadeh et al. [1]      | Wide-ranging framework     | Iran           | Construction             | A mixed-method approach was used. A building project was used as a case study. A questionnaire survey was also performed with the participation of 10 experts.                                             |
| Rostamnezhad et al. [28]   | Wide-ranging framework     | Iran           | Highway project          | A mixed-method approach was used. A Qom-Mashhad highway project in Iran was used as a case study. A questionnaire survey was also performed with the participation of 12 experts.                                        |
| Karakhan et al. [45]       | Workforce                  | USA            | Construction             | A mixed-methods approach that relied on semi-structured interviews and surveys was utilized. This process involved interviewing six experts—four industry professionals and two academics.                     |
| Almahmoud and Doloi [46]   | Community                  | Saudi Arabia   | Construction             | A quantitative approach was used. Two case studies of regeneration projects in Saudi Arabia were used as case studies. Also, a questionnaire survey was performed with the participation of 102 respondents. |
### Table 2. Cont.

| Authors                  | Focus of Study               | Study Location | Context | Approach                                                                                                                                 |
|--------------------------|-----------------------------|----------------|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| Goel et al. [33]          | Wide-ranging framework      | -              | Construction | A quantitative approach was used. Knowledge abstraction was performed through thematic analysis                                        |
| Goel et al. [47]          | Stakeholder                 | India          | Construction | A mixed-method approach was used. Feasibility study reports for 61 projects were obtained from various government organizations in India. |
| Montalbán-Domingo et al. [48] | Wide-ranging framework   | EU countries   | Construction | A qualitative approach was used. 451 tendering documents from 10 European countries were analyzed.                                          |
| Fatourehchi and Zarghami [34] | Wide-ranging framework   | Iran           | Construction | A quantitative approach was used. Also, a questionnaire survey was performed by participating 30 construction specialists and 15 academic researchers. |
| Kawesittisankhun and Pongpeng [49] | Wide-ranging framework | Thailand       | Construction | A qualitative approach was used. Besides, a questionnaire survey was performed by 225 participants from the construction sector. Interviews with six experts were also used to test the content validity of the questionnaire. |
| Montalbán-Domingo et al. [11] | Wide-ranging framework   | -              | Construction | A mixed-method approach was used. A questionnaire survey was also performed on 12 experts.                                               |
| Hosny et al. [50]         | Wide-ranging framework      | -              | Infrastructure | A qualitative approach was used. Besides, a questionnaire survey of 100 infrastructure development experts from various sectors was conducted. |
| Stanitsas and Kirytopoulos [51] | Wide-ranging framework | -              | Construction | A qualitative approach was used. Also, semi-structured interviews were conducted with 6 experts from academia and industry.          |
| Novelo et al. [52]        | Wide-ranging framework      | Mexico         | Construction | A qualitative approach was used. Semi-structured interviews of 5 participants from different disciplines were conducted. Also, a survey was performed by obtaining 79 responses from academic and industry participants. |
| Pham et al. [53]          | Wide-ranging framework      | Vietnam        | Construction | A qualitative approach was used. Moreover, using a survey questionnaire, empirical data are collected from 17 construction firms in Vietnam through 137 questionnaires. |
| Kordi et al. [14]         | Wide-ranging framework      | -              | Construction | A qualitative approach was used. Systematic Reviews and Meta-Analyses (PRISMA) methodology was also used.                            |

The context of each study is extracted from the papers as reported by the authors. Generally, the papers deal with construction at large without specific case study projects. In such situations, the context is mentioned as “Construction”. However, in other areas, the authors have executed case studies of particular project types such as buildings, roads, and housing. It is important to note that the contexts do not seem to be mutually exclusive.
or even very different from one another. The overlapping represents the focus of the study in terms of its context and application.

2.2. Development of Social Sustainability Framework

The development of the social sustainability framework, as shown in Figure 2, follows a systematic stepwise approach.

The factors were extracted and assembled into a framework. The framework was developed through a bottom-up approach. In doing so, a thematic analysis was performed where the extracted factors were treated as sub-indicators and organized into indicators and enablers. The thematic analysis helps identify, analyze, and describe patterns or themes within data. It arranges and explains the dataset in great detail [54]. This has been applied in similar studies such as Derakhshan et al. [55], who performed a thematic analysis to find out the three contexts that influence an organization’s stakeholder engagement approaches.

The thematic analysis of the current study treats the themes as top-level enablers that contain indicators that are made of sub-indicators extracted from the literature. An indicator is not only representational but is also a way of making sense of and responding to the situations we find ourselves in, thus having an impact [56]. Additionally, an enabler, or a theme, represents a higher level hierarchy of schematics that can be leveraged to implement sustainability [57,58]. Based on the bottom-up approach, leveraging an enabler should ordinarily result in a change in the value of an indicator.

The tradition of enablers representing the higher level of the hierarchy is established in the literature [12,13,59]. For example, Kumar and Anbanandam [13] developed a framework for the social sustainability of the freight transportation system by dividing it into three levels: enabler, criteria, and attributes.

The enablers of the developed framework are not strictly mutually exclusive, and it is possible to have overlap among some of their areas, as shown in Figure 3. Additionally, the enablers follow both functional and attributive categorization. In the functional categorization, the sub-indicators and the indicators are placed under an enabler.
based on the similarity of their function. For example, all the sub-indicators functioning and supporting health and safety are combined into the enabler “Safety and health”. George et al. [60] and Munny et al. [61] have identified health and safety as a fundamental enabler of social sustainability of production and manufacturing supply chains. The appropriate safety culture, policies, tools, and praxis create an enabling environment to achieve social sustainability. Similarly, all the sub-indicators supporting the development of human resources are grouped under the “Human resource development” enabler. Several studies have mentioned the application domains or sub-parts of human resource development. Mani et al. [62] identified labor rights, wages, and education as enablers of social sustainability.

On the other hand, attributive categorization groups together all the sub-indicators that have similar characteristics. For example, the sub-indicators supporting a project are grouped into the “Project” enabler. A project and its management in a sustainable way create a breeding ground to achieve social sustainability [63]. It is important to note that some enablers are contextual. For example, the sub-indicators of the “Project” enabler refer to the context of the project. Further, a project will operate within an industry which in turn will operate within the government-provided rules and regulations. Industry,
through its culture and coordination, enables social sustainability [64,65]. In addition, the
government, through regulations and incentives, drives the change from traditional to
sustainable construction [12]. Therefore, the enablers of “Industry” and “Government
rules, regulations and support” provide contextual and operational support to social
sustainability in construction projects.

Some functions such as human resource development or health and safety can be
treated at a project level, but they cut across the boundaries of project, industry, and the
government, which provide the context and activities, practices and culture, and rules
and processes, respectively. Lastly, the “Community” enabler follows both functional and
attributive categorization, in that, the community acts to support or oppose the project as
a function of their stakes in the project, proximity with the project, or legal claim on the
project. Additionally, the community shares attributes and characteristics that enable them
to achieve social sustainability. The overlap between “Community” and “Stakeholder”
enablers is interesting. Though the community is represented as a stakeholder [23], the
developed framework treats it as an external entity influencing and being influenced by the
project from a distance [31]. Stakeholders, on the other hand, are internal and external enti-
ties that closely interact with the project. These include clients, shareholders, government
bodies, donor agencies, and project personnel including the technical and non-technical
workforce of contractors, consultants, designers, and architects [66–68]. This distant inter-
action of the community is not so characteristic of the close cooperation that the project has
with the primary stakeholders, which are often contractually bound. So, the enablers of
the developed framework can be grouped into functions (human resource development,
safety and health), attributes (project, industry, and government), and a combination of
both (community and stakeholder). Also, the framework provides the means and ends
of sustainability and, while treating the community and stakeholders as superimposed
enablers, provides the basis to enable sustainability through the other enablers.

2.3. Synthesis of Sub-Indicators

After extracting the sub-indicators and recording them in an MS Excel sheet, they
were synthesized. In doing so, similar sub-indicators are merged. This is carried out to
avoid duplication, as sub-indicators with different words yet referring to the same concept
are found in the literature. For example, “regular health check-ups of drivers” and “health
check-ups for employers” [12] are merged into a combined sub-indicator “health check-ups”
and placed under the “Site health and safety” [28] indictor.

Moreover, this was carried out to combine related sub-indicators under the umbrella
of a more generic as well as representative sub-indicator. For example, “safety issues” [5]
is merged with the “fatality rate caused by wrong construction systems” [12] as well as
the “number of health-related premature deaths caused by the negative impact of freight
transport” [13]. Then, it is placed in the framework as the sub-indicator “Fatality rate
caused by wrong construction systems” categorized into “Site health and safety” [1,10]
under the “Safety and health” [43] enabler in the framework.

To highlight the most significant sub-indicators, two-stage content analysis is per-
formed. The purpose was to include only those sub-indicators in the framework that have
a numerically higher presence in the literature and are considered qualitatively important.
This could help in eliminating sub-indicators that are either very specific to particular case
studies or represent a much smaller breakdown of a more generic sub-indicator. In doing
so, the frequency of each sub-indicator is counted in the first stage. This means that the
number of papers having a particular sub-indicator is cumulated. Additionally, in the
second stage, a qualitative assessment is carried out on the scale of high, medium, and low,
showing the contextual importance of a sub-indicator within each paper. For this purpose,
each paper was carefully read to understand the importance of a sub-indicator reported
there. For example, the sub-indicator “job security” reported as “employment stability”
was interpreted to have a high score by Kumar and Anbanandam [13], since it is given a
Fuzzy performance importance weight of 1.557, with the highest score being 1.9. However,
this sub-indicator reported as “perceived job security” had a low score by Zuo et al. [40], since it had a frequency of 8 (50%) with the highest frequency being 16 (100%).

Based on their modal value, the qualitative score from each paper for every sub-indicator is determined and then converted to a semi-quantitative scale where low = one, medium = three, and high = five. After the qualitative and quantitative scoring, a final literature score is calculated through combined qualitative and quantitative scores as given in Equation (1). The quantitative score is normalized by dividing the frequency by 28 (total number of papers), and the qualitative score is normalized by dividing the modal value by 5 (the highest score value).

\[
\text{Literature score} = \left(\frac{\text{Cumulative frequency}}{28}\right) \times\left(\frac{\text{Qualitative score}}{5}\right) \quad (1)
\]

Finally, screening is performed on the normalized cumulative score of above 50%, which represents a simple majority of the selected factors in driving their overall impact. This approach has been reported in several studies aimed at framework development [69–71].

To enhance the applicability of the developed framework, a measurement unit is synthesized for each sub-indicator from the literature. In doing so, the prescribed unit is recorded from each paper and then all the used units are proposed in the framework. It is important to mention that the proposed units are homogenous for all the sub-indicators, such as the Likert scale, and there is no case where the proposed units present any conceptual or metrological contradiction. Owing to the contextual and subjective nature of social sustainability assessment, all the sub-indicators are measured over the Likert scale.

3. Results and Discussion

Following the structured methodology, the social sustainability framework is synthesized, as shown in Table 3. The framework follows a typical structure in which it has enablers, indicators, and sub-indicators. As previously mentioned, the sub-indicators have been sourced from the published literature, and the remaining hierarchy is synthesized through their schematic analysis. As such, there are a total of 7 enablers, 27 indicators, and 76 sub-indicators. In the following sections, the entire framework is discussed.

| Enablers                                      | Indicators                                               | Sub-indicators                                                                 | Project Phase             |
|-----------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------|
| Stakeholder and user participation and engagement | The project incorporates stakeholder’s opinions into operational decision-making | All phases                                                                   |                           |
|                                               | The project stakeholders agree with the project functions and amenities | Initiation and planning phases                                                |                           |
|                                               | Lessons learned during the planning and design phases are documented and shared with all stakeholders | Planning phase                                                              |                           |
|                                               | Partnering strategies are applied for resolving interpersonal conflicts among project stakeholders | Initiation phase                                                            |                           |
|                                               | Final users participate in the design so that decision-makers can understand and anticipate their needs | Planning phase                                                              |                           |
|                                               | Designs increase the wellness and productivity of the final users | Planning and execution phases                                                |                           |
|                                               | Impact of the project location on access to public transit, hiking opportunities, safe walking routes, and green spaces | Initiation and planning phases                                                |                           |
|                                               | The level of satisfaction among users                     | All phases                                                                   |                           |
| Stakeholder collaboration and conflict management | There is open communication among all stakeholders regarding their needs | All phases                                                                   |                           |

Table 3. Social sustainability framework.
Table 3. Cont.

| Enablers                              | Indicators                                         | Sub-indicators                                                                 | Project Phase                             |
|---------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------|
| Safety climate and culture            |                                                    | Safety and health care index                                                   | Planning and execution phases             |
| Health and safety literacy and education | Prevention through design is incorporated         | Induction to work areas and ongoing OHS training                              | Planning phase                            |
| Health and safety professionals       | Health and safety professionals are part of the design and execution team to help analyze health impacts on the final users and the community | Initiation, planning, and execution phases                                    |                                           |
| Health and safety performance         | The project conforms to current regulations, including certification, public safety, and fair work requirement | Planning, execution, and monitoring and control phases |                                           |
|                                       | There is a safe and reliable workplace              |                                                                                | Execution and monitoring and control phases |
| Safety and health                     |                                                    |                                                                                |                                           |
| Site health and safety                |                                                    |                                                                                |                                           |
|                                       | Fatality rate caused by wrong construction systems  |                                                                                | Execution and monitoring and control phases |
|                                       | Safe places are created where workers can feel safe in the community |                                                                                | Execution phases                           |
|                                       | Site layout considers safety issues                 |                                                                                | Planning phase                            |
|                                       | Health check-ups                                    |                                                                                | Execution phase                            |
|                                       | Stress on residents is caused by construction operations |                                                                                | Execution and monitoring and control phases |
|                                       | There are appropriate medical centers for injured workers |                                                                                | Execution phase                            |
|                                       | There is a psychological health check of the workforce |                                                                                | Execution phase                            |
|                                       | Materials robbery                                   |                                                                                | Execution phase                            |
|                                       | Sufficient access to personal protective equipment   |                                                                                | Execution phase                            |
|                                       | Regular vehicle maintenance                         |                                                                                | Execution phase                            |
|                                       | Subcontractors are hired considering their safety management abilities |                                                                                | Planning phase                            |
| Healthy and safe procurement          | Value Engineering is performed to improve construction safety issues |                                                                                | Planning phase                            |
|                                       | Social considerations are incorporated into a return-on-investment analysis |                                                                                | Initiation and planning phases            |
| End-user health and safety            | There is a safe and secure public facility for final users |                                                                                | Planning, execution, and closing phases    |
| Education and training                | Education and training opportunities are provided for employees and project staff |                                                                                | Initiation and planning phases            |
| Jobs and employment                   | There is job security for employees and project staff |                                                                                | All phases                                |
|                                       | There are jobs and investment opportunities         |                                                                                | Initiation phase                          |
|                                       | There are fair and clear employment practices/methods |                                                                                | All phases                                |
|                                       | Limited working times are available                 |                                                                                | All phases                                |
| Rewards and incentives                | Wage revision is regularly carried out              |                                                                                | Initiation and execution phases           |
|                                       | Leave and rest time are provided                    |                                                                                | Initiation and execution phases           |
| Procurements and claims               | A fair code of conduct is in practice               |                                                                                | All phases                                |
|                                       | Claims of workers and employees are properly handled |                                                                                | All phases                                |
|                                       | Material losses due to employee faults happen        |                                                                                | Execution phases                          |
|                                       | Human capital                                       |                                                                                | All phases                                |
|                                       | Local governments engage in design so that decision-makers can understand and anticipate their needs |                                                                                | Planning phase                            |
| Project planning and management       | Green building practices are applied throughout the design and construction processes |                                                                                | Planning and execution phases             |
|                                       | Regular taxes are paid by the company               |                                                                                | All phases                                |
|                                       | Design and construction firms with a sustainability focus are selected |                                                                                | Planning phases                           |
|                                       | Efficient pricing is practiced                       |                                                                                | Planning and execution phases             |
|                                       | Project cost and finance are effectively managed    |                                                                                | Initiation and planning phases            |
| Amenities                             | Important amenities are provided                    |                                                                                | Planning and execution phases             |
| Group/team interaction                | The project is close to public transportation and amenities |                                                                                | Planning phase                            |
| Disruptions caused by construction projects | Planning to minimize disruption caused by the construction process is done |                                                                                | Planning and monitoring and control phases |
|                                       | Traffic management around the project is done       |                                                                                | Planning and execution phases             |
Table 3. Cont.

| Enablers                        | Indicators                                                                 | Sub-indicators                                                                 | Project Phase                           |
|---------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------|
| **Industry**                    |                                                                             |                                                                                |                                         |
| Social performance              | There are corrupt practices in construction                                 | All phases                                                                      |                                         |
| Preventative actions            | Prevention of child and bonded labor is guaranteed                          | All phases                                                                      |                                         |
| Resilient planning is done to   | Resilient planning is done to enable future expansions due to population    | Planning phase                                                                  |                                         |
| enable future expansions due to | growth                                                                       |                                                                                |                                         |
| Local labor/supplier            | Local labor is trained, and local businesses are hired                       | Planning and execution phases                                                  |                                         |
| Supplier/business-related issues | There is an improvement in construction innovativeness                       | Planning and execution phases                                                  |                                         |
|                                 | There is an improvement in local infrastructure capacity                     | Initiation and planning phases                                                 |                                         |
| **Community**                   |                                                                             |                                                                                |                                         |
| Community importance            | New/additional community infrastructure needs resulting from the project are | Initiation and planning phases                                                  |                                         |
|                                 | managed                                                                     |                                                                                |                                         |
|                                 | Local communities are rehabilitated                                          | Planning phase                                                                 |                                         |
|                                 | Community Capital                                                           | All phases                                                                      |                                         |
|                                 | There is an impact of introducing new social classes into the surrounding    | Planning and closing phases                                                    |                                         |
|                                 | community                                                                   |                                                                                |                                         |
|                                 | The project impacts the cultural and ethnic identity of the surrounding      | Planning and closing phases                                                    |                                         |
|                                 | community                                                                   |                                                                                |                                         |
|                                 | The actual social impact on the community                                  | Closing phase                                                                  |                                         |
|                                 | The social and institutional relationships toward the community are managed    | All phases                                                                      |                                         |
|                                 | There is a quick response to community concerns and perceptions             | All phases                                                                      |                                         |
|                                 | The community is protected during the construction/demolition of a project   | All phases                                                                      |                                         |
|                                 | Primary education is supported in communities                                | All phases                                                                      |                                         |
|                                 | There is equal access for all community                                     | Planning phase                                                                 |                                         |
|                                 | Community concerns and perceptions are heard                                | All phases                                                                      |                                         |
| **Government**                  |                                                                             |                                                                                |                                         |
| provision of rules and regulations | There are trade and tariff barriers                                          | All phases                                                                      |                                         |
| Equity and human rights         | There is compliance with relevant laws and policies such as land use,       | All phases                                                                      |                                         |
|                                 | sector plan, cohesion with existing economic and social development         |                                                                                |                                         |
|                                 | Social justice and equity are ensured, and the different status of relevant  | All phases                                                                      |                                         |
|                                 | stakeholders is recognized                                                  |                                                                                |                                         |
|                                 | Voting rights and political freedom are upheld                               | All phases                                                                      |                                         |
|                                 | Consumer and human rights are protected                                     | All phases                                                                      |                                         |

3.1. Stakeholder

The first enabler for social sustainability in construction projects is the stakeholder. The stakeholder theory underscores the fundamental idea behind the notion of sustainable conduct. A stakeholder is the seed of unpredictability and subjectivity in the decision making of infrastructure and construction projects. Therefore, firms must consider stakeholders and community interests to ensure their long-term prosperity and survival [72]. Since each stakeholder plays a key role in an organization’s social responsibility, it is important to ensure that all stakeholders are identified and their interests are met [73]. However, not every system can satisfy all the needs of all the stakeholders, but it must satisfy the needs of many stakeholders. Moreover, the focus must not be only on short-term, static efficiencies such as productivity and profitability but also on long-term, dynamic efficiencies such as learning and innovations [74]. Moreover, corporate sustainability can be defined as meeting the needs of a firm’s direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities, etc.), without compromising its ability to meet the needs of future stakeholders as well [6]. Corporate social responsibility (CSR), or corporate sustainability management (CSM), refers to the new management discipline by which an organization can take steps to measure, manage, and report its impacts on society and the environment [75]. So, improving the social sustainability performance of construction projects can have a significant impact on the health, safety, education, wellbeing of people,
etc. It also enhances the quality of life for people by demonstrating their social corporate responsibility and commitment.

The stakeholder as an enabler in this framework is made up of four indicators and nine sub-indicators.

Stakeholder and user participation and engagement as a first indicator is influenced by the degree to which the project incorporates the stakeholder’s opinions into operational decision making [1,12,28]. It has been reported that stakeholder participation in the early project stages helps create the final product as close to stakeholder perception and needs as possible [76]. This process helps the project meet the functionality needs of users and amenities such as easy access to parking [21,23,44]. Furthermore, the aesthetic properties of the project should be taken into consideration, as well as the landscape and visual impact on the neighborhood. This helps to align the project with the stakeholder expectations and enhances cooperation for mutual decision making.

Therefore, stakeholder collaboration and conflict management are affected by cooperation through sharing documents and the lessons learned during the planning and design phases to improve planning and decision making for current and future projects [1]. However, this sharing needs to follow formal, documented, and structured processes. Therefore, strategizing and developing effective partnering relationships are other important factors in stakeholder collaboration and conflict management. For example, determining the scope of activity, clarifying and specifying key objectives and responsibilities, the commitment of specific financial resources such as cash, equity, and accomplishing the ultimate goals [1,44]. A lack of such an effective partnering relationship will drive wages and cause dissatisfaction among the stakeholders.

Thus, user satisfaction [31,41] should be seen as a priority in stakeholder accessibility and satisfaction, which is influenced by user participation in the design so that decision makers, designers, architects, engineers, and experts can understand and anticipate their needs [21]. For instance, analyzing the impact of the project location on access to public transit, biking opportunities, safe walking routes, and green spaces can affect stakeholder accessibility and satisfaction [1,21,28,76]. Moreover, the choice of construction methods and materials should be aligned to increase the wellness and productivity of final users. In housing and building projects, this can be performed by providing quality housing, meeting the residents’ indoor and space needs, etc. [10,21].

Putting this all together, it is essential to identify the needs of stakeholders and effectively communicate with them. This involves openly communicating and hearing all the needs and complaints of stakeholders as well as exchanging information [1,28,67]. Open and effective communication and engagement will ensure that the opinion of a stakeholder is heard and taken into account in critical decision making, which will close the loop through higher satisfaction. This will help resolve conflicts among the stakeholders, as open communication will pave the way for more engagement and understanding of each other’s point of view.

3.2. Safety and Health

The safety of the working environment on the project site significantly affects the social sustainability of construction projects. Regarding safe working environments, most of the sustainability literature (including the Brundtland Report) mentions safe and healthy living and working conditions as a key component of social sustainability. Socially sustainable firms should pursue all reasonable means to reduce hazards on their projects [8]. The construction process should be well planned and managed to reduce the risk of accidents. As Gatti, Migliaccio, Bogus, Priyadarshini and Scharrer [24] stated, monitoring workers’ physical strain is important to enhance the social sustainability of the construction industry. They surveyed industry practitioners to gain insight into industry needs and challenges for physical strain monitoring.

Safety and health as an enabler in this framework are organized into seven indicators and twenty sub-indicators.
Safety climate and culture refers to an organization’s beliefs, character, and attitudes manifested in actions, policies, and procedures that affect its safety performance [77]. The concept of safety climate and culture is influenced by the safety and health care index of the jurisdiction where the project is executed [21]. So, improving safety climate and culture will result in reduced incidents and better safety performance [78]. However, achieving an improved culture will need multidimensional concerted efforts—one of which is health and safety literacy and education, which should be an important step. This kind of literacy and education includes several aspects such as economic, social, technical, etc. One of the technical aspects is safety prevention techniques that prevent or minimize occupational hazards and risks during construction, such as the analysis of the sequence of construction activities and the use of prefabrication techniques [10,28]. Besides, it is also influenced by induction to work areas and ongoing occupational health and safety training [40,41].

The end user’s health and safety are affected by providing a safe and secure public facility. This includes the provision of secure and safe open places, paths, and facilities for the public. Furthermore, including security considerations for the final users in the project design will positively impact its social sustainability [30,31]. To improve the occupational health and safety of facility users during post-occupancy, it is pertinent to involve the health and safety professionals during the design stage. These experts in the design and execution team help in analyzing the health impacts of the project on the end users and those of the construction activities on the community [1,28].

The construction activities raise several site-related health and safety issues in the form of constant disturbance and stress on residents. Examples are the stress caused by heavy traffic and congestion on the road, noise, dust, and pollution [12,13]. This stress can be reduced through proactive and preventive design measures. Apart from the residents, creating safe places where the workers also feel safe in the community influences site health and safety. In this regard, site layout considering safety issues as well as performing health check-ups, providing appropriate medical and first aid facilities for physical injuries, and psychological health check-ups for mental health improve site health and safety. Additionally, the right, functional, and well-maintained equipment is also important. Thus, sufficient access to personal protective equipment and regular vehicle maintenance affect on-site health and safety.

All these measures help improve overall health and safety performance. One important aspect of this performance is regulatory, in which the conformity of the project with the current health and safety regulations, including certification, public safety, and fair work requirements certifies the preparedness and performance of the project. Therefore, a supporting and compliant environment must be made available to and created by the project stakeholders. For example, the level of compliance with safety standards should be determined and the construction safety rules should be followed [13,21,30]. This will help ensure a safe and reliable workplace [10] and reduce accidents and fatalities, including the number of construction-related deaths due to safety issues as well as health-related premature deaths caused by the negative impact of construction projects [13].

Lastly, all of this has to be formally embedded into the project contract. For that purpose, healthy and safe procurement through the hiring of subcontractors considering their safety management abilities and the adoption of value engineering to improve construction safety is crucial [28]. Besides, incorporating social considerations, such as health, productivity, and quality of life, into a return on investment analysis will affect healthy and safe procurement [10]. Principally, to be appealing in its entirety, the business case for social sustainability has to be substantiated by economic and financial gains in the short to mid-term.

3.3. Human Resource Development

The development of human resources is the process of enhancing and unleashing human expertise through organization development and personnel training. It helps improve individual as well as organizational performance [79]. Despite its significant role
in the economy and the importance of quality human resources to its performance, human resource development is not accorded priority in the industry [80]. This jeopardizes the social sustainability of construction projects.

Human resource development as an enabler in this framework is made by three indicators and seven sub-indicators.

Jobs and employment in the construction sector are affected by job security [1,12,13,41], fair and clear employment practices and methods [12,40], and creating jobs and investment opportunities [5,31,44]. For instance, encouraging businesses to invest in the area by incentivizing them to relocate can improve job opportunities and provide better employment.

Training in the construction industry globally usually means the provision of basic vocational training in various construction skills [80]. The enabler of education and training is influenced by access to education and training [1,13,40,43]. For instance, project managers must have access to education and training programs that enable them to update their skills [81]. Training employees is highly important, as better-trained and educated people are more valuable to a business [40].

However, it is not sufficient to create employment opportunities or train the employees for the sake of higher productivity. The employees must be motivated and incentivized, since their commitment is affected by rewards. The whole point of providing pay for performance is that additional financial rewards can be given to those who perform well. Thus, it acts as an incentive [82]. Rewards and incentives are impacted by limited working times [12,43]. Adequate breaks and reasonable working hours are perceived as critical criteria of social sustainability, otherwise the employees might feel like bonded labor [83]. The limited working times help reduce stress and fatigue-related injuries, offer better work-life balance, and improve the well-being of workers. In this regard, an employer should not insist on the employees working unreasonable hours, as they may feel “bullied” due to the fear of losing jobs [40]. Furthermore, not only must negative motivation be minimized, but positive motivation must be maximized through frequent wage revision and leave and rest time [12,13].

3.4. Project

Project-related factors are inputs to social sustainability practice that can directly or indirectly lead to project success. They encompass many factors, which have to be harmonized to ensure social sustainability. From an operational perspective, these factors are manageable at the project level. Thus, achieving social sustainability by addressing and optimizing them is relatively easier than those that are managed at higher levels. This dimension is gaining a lot of momentum lately [84,85].

The project as an enabler in this framework is made up of five indicators and fourteen sub-indicators.

Procurements and claims as the first indicator are influenced by a fair code of conduct [12,13]. Any excess or prejudice will harm the acceptance and reputation of the project, diminishing its social sustainability. The reputation may also be tarnished if the employees have a reason to believe that their claims are not restituted in a timely and fair manner. Therefore, the claims of workers and employees should be timely and fairly managed. Additionally, the material storage and warehousing must also be fair, in which any losses due to employee faults must be fairly yet compassionately restituted [12].

Project management is not only limited to its traditional success criteria but must have a broader view concerning sustainability [84]. However, it requires willing and capable project managers [86]. It also requires effective management of the project team. Therefore, teamwork with respect and honesty should be incorporated into the site discipline. Project team interaction is impacted by working together as a team with respect and honesty [1]. This will be possible when there are willing and capable members in a team. Thus, project planning and management are impacted by human capital [1,28], which is an intangible asset or quality that differentiates an organization
from others. Human capital captures the economic value of experience and skill such as the qualification, training, intelligence, behavior, health, loyalty, and punctuality that employers value. The willingness and capability of the management go one step ahead of where the understanding of potential benefits [86] drives the application of green building practices throughout the design and construction processes [44]. It is also found that socially sustainable management of construction projects presents possibilities of integrating social concerns in management processes at various levels, ranging from permanent firms that provide resources to temporary project organizations that deliver value [47]. In this regard, regular taxes paid by the company [5,12] and the selection of design and construction firms with a sustainability focus [1,10] are a testament to a firm’s commitment to sustainability. Along with that, efficient pricing [23] and project cost and finance analyses [5] in the form of cost–benefit assessment, planning, and construction costs, escalating cost, sources, and terms of funds are the financial indicators and drivers that influence the commitment to social sustainability.

The social sustainability of construction sites is also influenced by the availability of amenities such as the provision of necessities such as toilets, water, rest areas, first aid, worship places, etc., to site personnel as well as the proximity of the project to public transportation and other amenities such as hospitals, shopping centers, etc. [5,31,44]. However, it is not sufficient to be mindful of the project personnel only, as neighbors and other potential affectees must also be considered. Thus, construction projects must not look inside but also outside to ensure that they do not disrupt the normal life in and around them too much. So, it is opportune to develop and provide a plan to minimize disruption caused by the construction process [1,23,44]. Their management includes controlling noise level, pollution, glare, and waste produced by the project, eliminating nuisances (such as poor air quality, odor, vibration, congestion, and dust) during construction, reducing disruption to existing facilities, and ensuring provision for access to areas surrounding the construction. The disruption can also be eliminated by providing alternative facilities such as the provision of car parks and the development of alternative traffic plans around the project [21,31].

3.5. Industry

Industry-related factors represent one step higher than project-related factors. To address these factors, merely better and more responsible project management will not be sufficient. It will require changes at the level of the entire construction industry to make some impact. This enabler in the current framework is divided into four indicators and seven sub-indicators.

The social performance of the construction industry is influenced by corrupt practices [10,12], which are influenced by social aspects [87] and severely impact the social sustainability of the construction industry. The social performance extends to ensuring preventive actions against child and bonded labor [43] as well as failure due to latent conditions. This includes resilient planning enabling future expansions due to population growth, which means design for future construction plans must be based on forecasted future needs [44].

Furthermore, the construction industry may also ensure social sustainability by engaging, training, and hiring local labor, businesses, and suppliers [1,28]. This involves vernacular design to enable the use of local construction labor and suppliers. In addition, not only is engaging the local supply chain at its current capacity sufficient, but these supply chain actors can be empowered by improving construction innovativeness [12,13]. For instance, the use of innovative construction technologies and products to reduce the ecological and social burden of construction projects.
3.6. Community

Community is key to the effectiveness of strategies aimed at enhancing the social sustainability of construction projects. Community, as an enabler, is organized into two indicators and fifteen sub-indicators.

Social sustainability at the community level starts from acknowledging its importance and its infrastructure and institutional needs. So, community importance is influenced by improving local infrastructure capacity [31,44] through rehabilitation of the existing infrastructure assets as well as improved interoperability with the present facilities and future development plans to meet future needs. Community importance is also impacted by adopting a holistic approach through management of further community infrastructure needs arising from the project (e.g., water, power) [43]. These assets and infrastructures will help maintain a productive and socially engaged community.

Social engagement also involves ancillary services, such as rehabilitation of local communities. The community-based rehabilitation service is a multidisciplinary service that uses a case coordination mentality approach to provide comprehensive assessment and targeted treatment to people in need of such services within a home-based setting. This impacts the community or social capital [12,13], which is the accumulated goodwill that builds trust between community groups.

Construction projects indirectly impact the community by influencing or altering the local social fabric. Therefore, it is important to assess the impact of introducing new social classes into the surrounding community (e.g., a community in which low-income housing is proposed might perceive the new social class as a threat based on stereotypes and misconceptions) [10]. Where one stands in the social hierarchy has broad implications on their health, family life, education, and other living habits. So, it is important to analyze the effect of the project on the local community’s cultural and ethnic identity [23,28]. The project will affect the neighboring properties and their value. This social impact on the community must be effectively monitored [10] through a social impact assessment of the project. Moreover, the community should be protected during the construction or demolition phases of the project [40]. For instance, establish a roadmap for the continuing assessment of the impact of the project on the local communities until it is operational.

Community importance is also influenced by the social and institutional relationships of the community. This includes cultural heritage preservation, social cohesion, protection of human rights, etc. [5,23,30]. This does not have to recognize only the international declarations but must also consider national, regional, and local declarations and customs. This goes on to proactively and immediately address community concerns and perceptions [10]. Such perceptions can be broader, such as support for primary education in communities [13], and equal access [30] are considered important factors of community importance.

All these functions are built into and leveraged through community participation and engagement, and the first rung of this ladder is paying heed to the community concerns and perceptions [28,44] through meeting the community needs in pursuing development and active engagement [23,43] through public discussion and transparency. This indicator is also affected by designing the project in a way that represents the local character and identity of the community [10,44]. This will only be possible if community concerns are heard. To address such aspects, a diverse design team including participants from various professions, genders, races, and firm sizes should be selected. Moreover, reflecting public art in the neighborhood (such as color harmonization) should also be taken into consideration. The optics of socially sustainable development go a long way with the community.

3.7. Government Rules, Regulations and Support

Smart and proactive governance is at the core of social sustainability [88], and not everything can be managed by stakeholders at the project, industry, or community level. Some higher powers in the form of legislation, support, and patronage need to come into play to enhance the social sustainability of construction projects. The synthesized
framework contains the enabler of government, which is organized into two indicators and five sub-indicators.

The first and foremost job of a government is to bring about enabling legislation, and in that, the provision of rules and regulations is influenced by trade and tariff barriers [12,30] indicating the economic affordability of sustainability-related laws. The support offered by governments must ensure the applicable laws and policies such as land use, sector planning, and consistency with existing economic and social development are followed [1,12].

In addition to offering enabling legislation, a government’s role in providing a level playing field is also crucial. This is done through equity and human rights by ensuring social justice and recognizing the different statuses of relevant stakeholders [12,42]. This is important to share the quantity and quality of information with stakeholders. Moreover, in the interest of social cohesion and to provide transparency, the public should be educated about planning and design progress. Social empowerment through voting rights and political freedom is also identified as an influential sub-indicator. Lastly, social empowerment also demands safeguarding the consumer and human rights. By putting in place the human rights grievance mechanism as well as ensuring the protection of human rights and freedom, it enhances the social sustainability of the construction sector [12,13].

4. Conclusions

Social sustainability is a less focused area of sustainability both in the literature and in practice. This results in subjective assessment and vague recommendations. Not only the recommendations coming out of social impact assessments are elusive but also the taxonomy to precisely and comprehensively measure it is subjective and contextual. Due to the lack of a standardized taxonomy, practitioners are left to pick and choose the measurement variables of social sustainability quite instinctively resulting in questionable reliability. The subjectivity in social sustainability assessment can be minimized under a comprehensive assessment framework and using diverse, representative, and reliable input data sources. For this purpose, the current study develops a comprehensive framework of social sustainability in construction projects based on the review of published research. In doing so, it extracts the relevant articles and identifies and categorizes the different contributors to social sustainability.

Precisely, a systematic review methodology is employed in which journal papers published until 2021 in the area of social sustainability in the construction industry were reviewed. The findings are based on the synthesis of 28 selected papers where either one or more influencing factors on social sustainability are discussed. To develop the social sustainability framework, the shortlisted research papers were carefully read to cover more than one factor. This was done to ensure broad coverage of factors against the minimum effort. Identification of the criteria for measuring the social sustainability of construction projects is the main contribution of this review to the body of knowledge. The categorization offers an intuitive and methodical view of social sustainability. This paper facilitates an improved balance among the triple bottom line components of sustainability in construction projects by proposing a comprehensive assessment framework. With the hierarchy of framework components in place, the next area of concern will be establishing the aggregation approach to make the whole process unified while assessing social sustainability. Aggregation of parameters needs to take into account the scale effects and varying nature of parameters as for some, the higher values and for others, the lower values are preferable. Normalization of parameters using the Diaz-Balteiro equation is an effective solution for problems relating to the aggregation of parameters [89–91].

To identify the relative importance of different factors representative of social sustainability in the construction industry, a survey or structured interviews with experts need to be conducted. The development of an unbiased and fully representative framework can only be possible by improving upon the limitations of previous research and by understanding the perspective of experts in this area. The subjective sub-indicators used in social sustainability assessment can be measured on a Likert scale of 1–7 or 1–5 [91,92].
The outcomes of this research are expected to have a significant impact on the improvement of social sustainability by offering a holistic approach to investigating the influencing factors. The framework significantly contributes to research and practice. Practitioners and policymakers can use the framework as a guideline to plan, gauge, and improve efficiency in implementation practices and researchers can benefit from the structure and collection of sub-indicators, indicators, and enablers for their research.

This research like other literature reviews has some limitations that should be acknowledged. The framework can be enhanced as it is based on a limited number of studies since this topic is evolving as well as the choice of keywords can be broadened. Some papers that could have been included in developing the framework are [93,94]. Also, since the synthesis is based upon the core collection of Scopus, an intrinsic limitation in terms of the coverage of publications may be affected. Also, specific themes can be used as a search string to include papers focused on particular sub-areas of social sustainability. This could improve the number of papers and give out a fairly large sample of papers by dramatically increasing the set of keywords to ensure comprehensive coverage of relevant literature. Moreover, the absence of empirical evidence is out of the scope of this study, it could be the starting point for future research to empirically explore and validate the proposed framework by engaging with the industry experts and by putting it into practice.

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