







## RESEARCH PAPER

# Bridging External Stakeholders and Sustainability Literature: a review looking at a project management context

Manoela Pastor dos Santos<sup>1</sup>, Marcela Melo Rego Raposo<sup>1</sup>, Edivan Alexandre Ferreira<sup>1</sup>, Fernando Tobal Berssaneti<sup>1</sup>, Mario Sergio Salerno<sup>1</sup>, Marly Monteiro de Carvalho<sup>1</sup>

<sup>1</sup>University of São Paulo (USP), São Paulo, Brasil.

How to cite: Santos, M.P. et al. (2023), Bridging External Stakeholders and Sustainability Literature: a review looking at a project management context, *Brazilian Journal of Operations and Production Management*, Vol. 20, No. 3 special edition, e20231243. <https://doi.org/10.14488/BJOPM.1243.2023>

## ABSTRACT

**Goal:** This study aims at bridging the stakeholder and sustainability literature, focusing on the project context. It aims at identifying the main challenges of mapping and dealing with the external stakeholders concerning the sustainability perspective during the project development.

**Design/Methodology/Approach:** The research design is a literature review merging bibliometric and content analysis. The sampling process includes two primary databases, Web of Science and Scopus. We applied the data on the software VoSViewer for the first phase of bibliometric analysis and on software NVivo for better content analysis.

**Results:** This article contributed to the literature with an in-depth analysis of 96 articles that bridge stakeholder and sustainability. It identifies the stakeholder influence on sustainability issues in projects and the main environmental challenges faced. Besides, there is a prominence of the environmental dimension of the triple bottom line; therefore, the social aspect is little considered in stakeholder management projects.

**Limitations of the investigation:** This study presents limitations related to the research methods selected. First, the sampling strategy constrains the sample related to the search strings and logical operators applied. The application of the research's exclusion criteria brings subjectivity to the analysis.

**Practical implications:** The research highlights the significance of the identification and mapping of the critical stakeholders for alignment of the sustainability strategy for the project development, which helps to explore risks associated with the sustainability aspects.

**Originality/Value:** We contribute by exploring the gap in research in the intersection between stakeholders and sustainability literature in project management.

**Keywords:** Stakeholder; Sustainability; Project Management; External Stakeholders.

\* Those articles are from Call for Papers, "When titans meet – Industry 4.0, Lean and Circular Economy Opportunities towards operational excellence and Sustainability". Due to their relevance and contribution to the field, the articles were published in the September/2023 Special Issue of the Brazilian Journal of Operations & Production Management.

**Financial support:** None.

**Conflict of interest:** The authors have no conflict of interest to declare.

**Corresponding author:** [manoelapastor@usp.br](mailto:manoelapastor@usp.br)

**Received:** 21 May 2021.

**Accepted:** 10 February 2023.

**Editor:** Daniel Nascimento, Guilherme Tortorella, Rodrigo Goyannes Gusmão Caiado, Juan Manuel Maqueira.



This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## 1. INTRODUCTION

Sustainability is present in stakeholders' interests, who are more aware of the impacts caused by organizations in society. Therefore, sustainability actions often are raised by stakeholders, mostly external stakeholders (Olander, 2007). In the last ten years, sustainability became a significant theme in Project Management (Gemünden, 2016), which pulls dialoguing and engaging the stakeholders as preconditions for including sustainability in the agenda of projects (Marques et al., 2018).

On its essence, the triple bottom line (TBL) as expressed by Elkington (1997), refers to the three lines using the terms: profit, people, and the planet.

However, Goel (2010) has given rise to sustainability expanding the concept of TBL by providing a framework for measuring the performance of the business and the success of the organization using three lines: economic, social, and environmental.

The project's complexity and conflicts generated by stakeholders' diversity make it necessary to develop metrics and methodologies to manage the different types of stakeholders, particularly in civil construction (Marques et al., 2018; Ahola, Stähle, & Martinsuo, 2021).

The projects have significant impacts on sustainability (Marques et al., 2018). Besides, analyzing the heterogeneity among local stakeholders, with multiple and different perceptions, is critical in managing megaprojects (Campos et al., 2018).

Although the concept and definition of the term stakeholder have been controversial during the latest decades, Freeman (1984) states it not only considering a company shareholder, however other parties as customers, employees, suppliers, governments, competitors, consumer advocates, environmentalists, special interest groups and the media.

Aarseth et al. (2017) highlight that project stakeholders are responsible for developing strategies emphasizing sustainability; such findings contrast with traditional literature, which highlights a small group of agents responsible for strategy. Moreover, integrating external stakeholders into interorganizational projects in the development and execution process is important to project success (Lehtinen and Aaltonen, 2020).

The sustainability strategies adopted by companies are mentioned by Aarseth et al. (2017) but not limited to as, plans focusing on the fulfillment of their sustainability-related goals or limited to projects carried out within the boundaries of a single organization (e.g. internal product development projects).

The perspective of sustainability management in complex projects, with qualitative research, identifies different types of sustainability in projects (Aarseth et al., 2017; Besser Freitag, Anholon, Oliveira, and Larrain, 2017).

The practitioner literature still lacks issues related to sustainable development (Eskerod and Huemann, 2013). Project management guides still neglect sustainable aspects and the management of external stakeholders. Thus, it makes it more necessary to discuss these topics in the development of projects.

Stakeholder management is only dealt with in the literature from the perspective of project managers (Lehtinen and Aaltonen, 2020).

The perspective of external stakeholders needs future research highlighting the importance of validating the model developed through qualitative research, quantitative and mixed contributions to the literature, and strategies for managing external stakeholders (Lehtinen and Aaltonen, 2020).

A helpful approach is social network analysis, allowing discovering network ties among stakeholders and designing effective network interventions (Fliaster and Kolloch, 2017).

Therefore, research focusing on both topics, stakeholders, and sustainability is needed (Martens and Carvalho, 2017).

Martens and Carvalho (2017) recognized it as an interesting topic and recommended future studies on the validation and structuring of sustainability constructs and variables within a triple bottom line structure that would be useful for future research.

It aims at identifying the main challenges of mapping and dealing with the external stakeholders concerning the sustainability perspective during the project development. Therefore, the research question is: How should external stakeholders be identified,

managed, and monitored from a sustainability perspective during the project development?

This study contributes to the literature by bridging those topics of external stakeholders and sustainability in a project management context by summarizing these three main topics in one study and lighting up an avenue for future research in a practical environment to map and identify best practices over a specific classification of fringe stakeholders and the impacted community in a project social aspect.

The first section presents the introduction and purpose of the article, in the second a brief review of the main concepts worked on, in addition, a brief introduction to the research field. In the third part of the text, the authors explain the research methodology; in the fourth part, it presents the data analyses performed, in the fifth the results, and finally, the sixth part the exercises.

## 2. LITERATURE REVIEW

This section aims to present the fundamental concepts and definitions related to stakeholders, sustainability, and the relationship between them, as identified in the evaluated academic bibliography. It begins with a presentation of the fundamental concepts and definitions for a better understanding of the reader regarding the research context.

### 2.1 Stakeholder and Project Environment

An important concept in strategic management is the stakeholder (Xue et al., 2020). Stakeholders can be defined as communities, groups involved, unions, trade associations, environmental groups, associated corporations, future employees, future customers, the public and government bodies are processes of defined groups of stakeholders (Donaldson and Preston, 1995; Sallinen, Ahola, and Ruuska, 2011).

Consistent with this definition, PMI (2017) explained that stakeholders are defined: "An individual, group or organization who may affect, be affected by, or perceive itself to be affected by a decision, activity or outcome of the project".

The authors Eskerod and Larsen (2018), in their turn, explained that all parties that may be affected or affect the project must be considered as a stakeholder. Besides that, in the management process is crucial to the proper classification of stakeholders to know who they are (Nguyen and Lee, 2019).

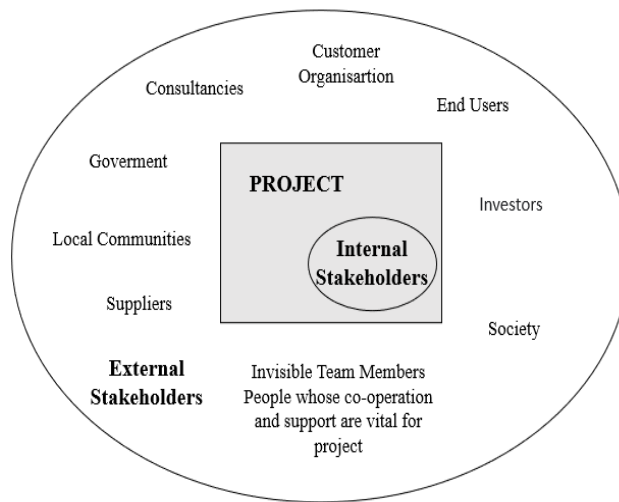
In a project, stakeholders are used to designating all individuals or groups that are directly and/or indirectly involved in the project, they can be reflected in the following classes: The stakeholders that make the decision; stakeholders who facilitate decisions; stakeholders who are affected by the project and the policymakers (Edum-Fotwe and Price, 2009).

However, classification is not the same as identifying a stakeholder; in addition to a stakeholder definition, attention should be paid to how the actual stakeholders fit within these classes (Achterkamp and Vos, 2007).

Stakeholders can also be classified as internal and external. Internal stakeholders are the internal members of the project or organization and the external stakeholders can be customers, society, government, suppliers, and others (Aaltonen and Kujala, 2010).

Aaltonen and Kujala (2010) explained in their article that external project stakeholders are not formal members of the project coalition but may affect or be affected by the project.

The authors Guo, Chang-Richards, Wilkinson, and Li (2014) and Heravi, Coffey and Trigunarsyah (2015) suggested in their research a map's model identify the stakeholders of a project. Based on the two researchers, the figure below illustrates the stakeholders' map of a project:



**Figure 1-** Stakeholder mapping

**Source:** Adapted from Heravi, Coffey and Trigunarsyah (2015).

Purposeful interaction with stakeholders is considered a principal task within project management (Huemann, Keegan, and Müller, 2016; Littau, Jujagiri, and Adlbrecht, 2010; PMI, 2017) and has been so since Cleland (1986) on ongoing project evaluation as well as on project stakeholder management.

Aaltonen and Kujala (2016), in their research on a better understanding of the stakeholder's project scenarios, the authors presented an analysis of the main scenarios in which stakeholders can position themselves and what are the main dimensions and their sub-factors that it is important to consider during the project execution to have success. The four key dimensions are complexity (including stakeholder element and complexity of the stakeholder relationship), uncertainty, dynamism, and institutional context. The syntheses of stakeholder complexity cover the number of stakeholders, varieties of the types of stakeholders involved in the project, and the internal objectives and complexities (Aaltonen and Kujala, 2016).

## 2.2 Sustainability and projects

Usually, one of the most important challenges in a project is sustainability. It has a fundamental role, being linked to the implementation of practices, activities, and compliance with the standards of regulatory aspects related to sustainability, but despite the high relevance, sustainability, and its daily operation need to be further researched (Silvius, Kampinga, Paniagua, and Mooi, 2017).

Sustainability is seen as a strategic theme for projects and organizations, encompassing all activities, processes and benefits, seeking to understand the welfare needs of current stakeholders, without compromising meeting future needs (Keeyes and Huemann, 2017).

The authors like Aarseth et al. (2017) clarified in their research that the projects are increasingly globalized and contributing to growth in the local communities where they are implemented, but they also represent challenges to society and government, with sustainable development being one of these challenges. They identify eight strategies for implementing sustainable practices in projects. Sustainability is a holistic approach with integrated dimensions of economic growth, environmental issues, social well-being of all economic development activities, commercial and non-commercial, and that incorporates values of participation, transparency, and equity (Clifton and Amran, 2011; Robèrt et al., 2002; Steurer, Langer, Konrad, and Martinuzzi, 2005). Traces of the beginning of sustainable development can be seen in the early 18th century when von Carlowitz (1713 / Reimpresso 2009) defined sustainable production in its forestry principles (Morgenstern, 2007).

Currently, the theme is seen more widely, covering in addition to environmental issues, economic and social factors related to sustainability. This perspective is addressed by the TBL (Triple Bottom Line), which integrates the ecological, economic, and social dimensions,

thus encompassing themes that go beyond the emphasis only on environmental issues.

Researchers agree that in SD there is a need to balance social, environmental, and economic objectives simultaneously and these goals are also referred to as the three pillars or objectives of sustainable development (Aarseth et al., 2017).

The Economic dimension is necessary to ensure, for example, financial efficiency and stability. And the social dimension is important to fulfill objectives such as security, social justice, education of the workforce, equal opportunities, and it is possible to state that, in summary, the ecological, economic, and social dimensions are equivalent to the planet, profit, and people, and they are interrelated and influential one under the other (Eskerod and Huemann, 2013).

The dimensions of the TBL are exposed to several factors. For example, context can be defined by global, national, regional, local, and it depends on the kind, size, and complexity of the project. In some cases, smaller projects may permeate just one of the dimensions more deeply (Edum-Fotwe and Price, 2009).

It should be noted that regarding sustainability, it is important to mention that all the dimensions exposed are related to some type of stakeholder. These stakeholders have a strong influence on the results and how the project is perceived whether by associations or society in general.

For projects with an emphasis on sustainability it is suggested in the bibliography that they have a joint, open, and flexible negotiation approach, performing modeling between multiple stakeholders, this way of managing in contrast to traditional closed models, in which few key actors are selected taking the project ahead (Aarseth et al., 2017).

### 3. RESEARCH METHODS

The research has two phases of development, the first consists of the identification of the database and the second reading and analysis of the sample. This process is represented by the testing and consolidation of the search strings, database, and sample. The first phase is important, as it is through this process that the authors will be able to understand the process and the meaning of some terms for the area. The process ends with bibliometric results, publication analysis by year, the number of publications by country, and citations by authors (Di Vaio, Palladino, Pezzi, and Kalisz, 2021).

The second phase consists of deepening the researchers in the theme, this phase is known as content analysis, it is responsible for the evolution of research and organization of the field. It is the most time-consuming process and requires attention and dedication from researchers (Duriau, Reger, and Pfarrer, 2007). In the co-citation analysis, it is possible to identify how the authors behave, the citation structure, and how they are related (Carvalho, Fleury, and Lopes, 2013). The content analysis is also composed by the analysis of co-occurrence of keywords and classification of the sample by methodological approach. It is in content analysis that the authors can deepen the theme.

#### 3.1 Sampling process

Initially, searches were carried out on databases consolidated in the literature review, such as ISI Web of Knowledge (Web of Science) and Scopus (Takey and Carvalho, 2016). To identify work related to the theme of stakeholders and sustainability in project management. A search was carried out in the databases cited above, using the terms: Stakeholder\* AND Sustainab\* AND "Project Management". The search in the two databases resulted in 961 documents.

To refine the research and filter works that were related to the scope of the research, other refinement steps were performed.

After testing and verifying the volume of data found in the database, the authors identified several papers outside the scope of the work, for example: "sustainable design"; software development and sustainable development for the oil industry, etc. Hence the central theme of the research is related to stakeholder constructs and sustainability, many related areas are identified in the database.

To remove areas that are not in the scope of the research, the authors searched for the themes Stakeholder\* AND Sustainab\* in journals in project management. As analyzed in Table 2, the most recognized journals around project management were analyzed. Also, innovation journals were searched individually to check possible emerging themes, but nothing concrete was found.

Thus, after analyzing the researched journals, the authors chose the articles found in the database of the International Journal of Project Management to form the sample. This choice was because the journal presents the most consistent sample of the researched journals. It was identified in the two bases, WoS and Scopus, 169 documents that presented the words stakeholder\* AND sustainab\*. The sampling process can be analyzed in Table 1.

**Table 1** - Sample process

Steps	Options	Stages	WoS	Scopus	Total
1st	Title, Abstract and Key-words	Stakeholder* AND Sustainab* AND "Project Management"	216	745	961
2nd	All + Source Title	Stakeholder* AND Sustainab* AND "International Journal of Managing in Business"	8	93	101
<b>2nd</b>	<b>All + Source Title</b>	<b>Stakeholder* AND Sustainab* AND "International Journal of Project Management"</b>	<b>18</b>	<b>171</b>	<b>189</b>
2nd	All + Source Title	Stakeholder* AND Sustainab* AND "Project Management Journal"	3	53	56
2nd	All + Source Title	Stakeholder* AND Sustainab* AND "R&D Management"	6	-	6
2nd	All + Source Title	Stakeholder* AND Sustainab* AND "Journal of Product Innovation Management"	3	24	27
2nd	All + Source Title	Stakeholder* AND Sustainab* AND "Technovation"	4	46	50
3rd	Document Type	Article OR Review OR Editorial Material	16	152	168
<b>Final Database</b>			<b>96</b>		

**Source:** Authors (2020)

It is noteworthy that the term Project Management was removed because, in the second phase of the research, the journals were in project management, therefore was no need for the term between the search strings.

The search was conducted in October 2020 and updated in January of 2022. It consisted of the presence of the words "stakeholders" and "sustainability" in the documents of the "International Journal of Project Management". No other types of filters were applied to collect as much data from the journal.

In turn, the title, summary, and keywords were read to perform another filtering in the research, thus 74 articles were excluded, representing 48% of the sample. The exclusion criterion occurred empirically, in which those articles that the authors understood were not part of the context to be investigated were disregarded. In the end, the final sample was represented by 96 articles. After that, the references of the articles in the sample were analyzed and those related to our research topic were selected. This practice is called snowballing. This resulted in 16 articles were selected. Figure 2 represents the research process.

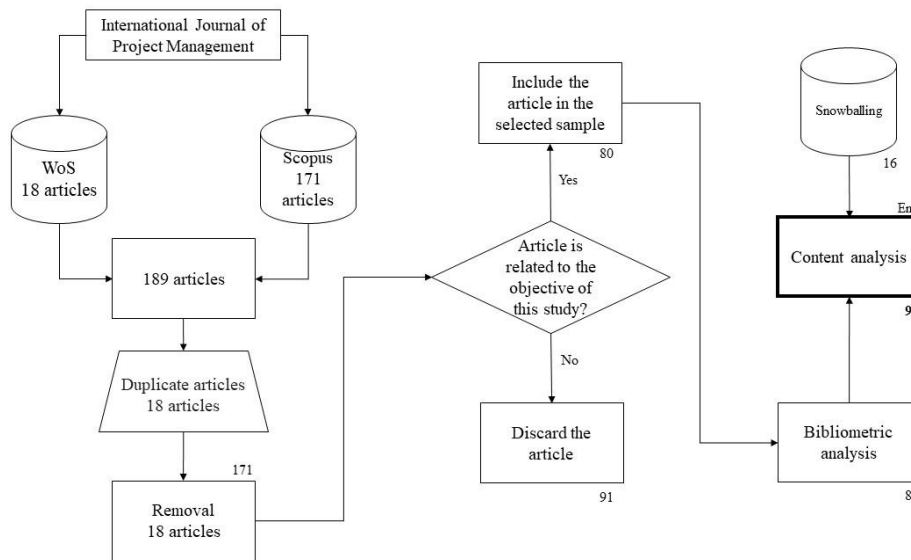


Figure 2 - Database development

### 3.2 Data analysis

With the support of the VosViewer software, the software is responsible for the development of word clouds and the analysis of authors. Bibliographic data will be analyzed from co-citation and keywords, thus highlighting concepts related to research. Which will enable the identification of the main terms used.

This phase of the research is essential for understanding the field, identifying the years with the most publications, as the most cited authors.

Finally, content analysis will consist of reading the abstract, keywords, and results, to filter the most relevant articles for this research. This phase will have the codification process, which will analyze the articles by type of research, areas, and contributions. In this phase, the support was Nvivo, software for codification and analyses of data.

## 4. RESULTS

### 4.1 Bibliometric analysis

The selected articles that make up the sample were published in the period from 2007 to 2020, by 69 authors in only one journal. Figure 4 shows an increasing increase in publications from 2014 to 2017. The year 2017 stands out with an expressive number of published articles. The last 5 years represent 90% of the sample, this may indicate that the field is at its peak of discussion.

As seen in Table 2, the most cited author is Wang J., cited 590 times with only 3 papers included in the final sample. In second place is Zou P.X.W., cited 573 times with 5 articles, which shows how relevant this author is for the theme. Yang R.J. and Shen G.Q. are other examples because they are cited over 350 times.

Table 2 - Number of published articles and citations per author (Continue)

Author	Documents	Citations
Wang J.	3	590
Zou P. X. W.	5	573
Yang R. J.	6	456
Shen G. G.	5	354
Mok K. Y.	2	208

**Table 2** - Number of published articles and citations per author (conclusion)

Author	Documents	Citations
Shi Q.	3	173
Liu Y.	2	138
Aaltonen K.	3	129
Ahola T.	2	103
Di Maddaloni F.	3	73
Davis K.	3	73

Source: Authors (2020).

#### 4.1.1 Co-citation analysis

With the support of Vosviewer, the co-citation network was developed. This analysis is important, as it allows authors to understand the field of research based on the reference of the sample articles.

The analysis allows the understanding of how the field is structured, which actors are most important for the areas, and which themes are being commented on (Carvalho et al., 2013).

The software presented three clusters that are identified by the colors, red (Cluster 1), green (Cluster 2), and blue (Cluster 3).

To develop the model, the authors reviewed 73 articles and defined 3 main clusters: cluster 1 based on external stakeholders and its importance for the success of the project, especially in environmental decisions. Cluster 2 discusses the conflicts between the stakeholders and the project managers, the literature has meters to identify the influence. Cluster 3 focuses on articles on literature reviews.

Cluster 1 is represented by 24 documents, the main authors debate about the identification and management of external stakeholders.

The articles develop processes for identifying external stakeholders (Aaltonen, 2011), the influence of external stakeholders in the project stages (Aaltonen and Kujala, 2010), highlighting the initial phase of the project (Aaltonen, Kujala, Havela, and Savage, 2015).

The megaprojects debate is the second most discussed topic in the cluster. The robustness of megaprojects, the difficulties in dealing with stakeholders, and issues of sustainability, economic, social, and environmental, make the theme closely related to stakeholder management and sustainability (Olander and Landin, 2005).

Thus, it is noteworthy that Aaltonen's articles (2010; 2011; 2015) highlight external stakeholders, which still lack debate in the literature few studies on this topic are carried out (Aaltonen and Kujala, 2010).

The other references in the cluster discuss the structuring of stakeholders in general, the authors highlight the importance of these actors for the success of the project, however, they do not classify them as internal and external in their structures. Sustainability is a secondary theme in the cluster, the articles that most address this theme are Aaltonen's texts. And identifies those external stakeholders charge project managers for managing sustainability in the project phases.

In Cluster 2, the authors discuss conflict management among stakeholders, since in a mega-project, there is a diversity of stakeholders, causing a conflict of interest between them (Olander, 2007), as well as the conflict of stakeholders with managers of projects (Li, Ng, and Skitmore, 2012). Metrics are developed to analyze the influence of stakeholders on the project and how project managers can deal with conflicts.

The authors argue that the conflicts generated by the stakeholders can cause schedule and cost overruns. For this, Aaltonen and Kujala (2010) develop a framework that identifies the importance and impact of the stakeholder in the phases of the projects, thus helping project managers to classify them and thus make better management.

It is noteworthy that research shows that stakeholder involvement in environmental decisions improves the quality of actions (Reed, 2008) since environmental problems are more complex and require more flexible decision-making.

Thus, cluster 2 makes evident the discussion about conflicts between stakeholders, the



importance of management, and identification of the stakeholder impact for the project, thus avoiding overflows in the project. Reed (2008) in a bibliographic review highlights that the presence of external stakeholders in projects can improve the quality of environmental decisions. Finally, Reed (2008) highlights the importance of institutionalizing the participation of external stakeholders in decision-making, making it a culture of the organization, thus avoiding conflicts of interest.

Cluster 3 represents a greater variety of articles, the main aspect of this cluster is the articles on literature review, especially on megaprojects. The most relevant articles in the sample discuss megaprojects, the theory of the iron triangle, and corporate social responsibility. Mok, Shen and Yang (2015) carry out a literature review on megaprojects and identify aspects of the stakeholders to be managed for the success of the project.

The literature review Aguinis and Glava (2012) discuss the political structure of organizations in corporate social responsibility actions. The theory about the iron triangle is questioned by Atkinson (1999) as being one of the most important theories to measure the benefits of the projects for the stakeholders.

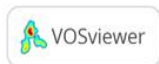
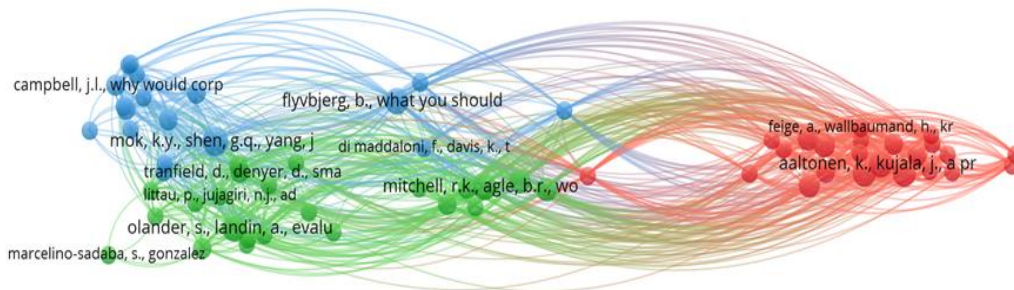


Figure 3 - Co-citation network.

#### 4.2.1 Keyword co-occurrence analysis

During the analysis, it was possible to identify several occurrences of keywords such as project management and stakeholder, however, the sustainability aspect does not even appear in the keyboard cloud as shown in figure 3. This may be an indication that the literature needs more debate about sustainability.

It is also important to highlight that the term sustainability although is not directly referred to in most of the papers selected for this study, does appear in several articles following the terms of environmental issues of a project considering but not limited to the environment, financial, and the social part of the triple bottom line.



Figure 4 - Word cloud by the recurrence of words

## 4.2 Content analysis

After the systematic analysis on the proposed research theme, relationships between stakeholders, projects and sustainability were identified, and the analyzes about the subject based on the academic literature are presented in this section.

Table 3 represents the sample of documents analyzed in this research. All papers went through the double-blind peer-review process. Of the analyzed articles, 46% are case studies in civil construction organizations, with emphasis on megaprojects. 28% are represented by a literature review on stakeholder management and project management. 11% survey, 10% theoretical-conceptual, and 6% modeling and action research. The case studies stand out as a predominantly qualitative methodology that highlights that the field is still in the process of consolidation (Yin, 2001).

The theme of sustainability in the articles was put in the background. To a large extent, the articles debate stakeholder management and relate to sustainability as important points for the success of the projects. There is an emphasis in the literature on the importance of making these constructs institutional, integrating them into the organizational culture.

The results can be analyzed in Table 3.

Table 3 - Data collection and classification (continue)

Methodology	References	Subtopic
Literature Review	(Xue et al., 2020); (Sabini, Muzio, & Alderman, 2019); (Derakhshan, Turner, & Mancini, 2019); (Ahola, 2018); (Xia, Zou, Griffin, Wang, & Zhong, 2018); (Clegg, Killen, Biesenthal, & Sankaran, 2018); (Esgerod & Larsen, 2018); (Cui, Liu, Hope, & Wang, 2018); (Di Maddaloni & Davis, 2017); (Zhou & Mi, 2017); (Martens & Carvalho, 2017); (Oppong, Chan, & Dansoh, 2017); (Aarseth et al., 2017); (He et al., 2017); (Silviu et al., 2017); (Brunet & Aubry, 2016); (Aaltonen & Kujala, 2016); (Yu & Leung, 2015); (Mok et al., 2015); (Hornstein, 2015); (Too & Weaver, 2014); (Frinsdorf, Zuo, & Xia, 2014); (Achterkamp & Vos, 2008)	Construction projects; Stakeholder; Sustainable development; Governance; Organization; Stakeholders; Network governance; Risk; Infrastructure; Local community; Uncertainty; Major public projects; Public engagement

**Table 3 - Data collection and classification** (conclusion)

Methodology	References	Subtopic
Case Study	(Guertler & Sick, 2021); (Cuganesan & Floris, 2020); (Hoffmann, Ahlemann, & Reining, 2020); (Miković, Petrović, Mihić, Obradović, & Todorović, 2020); (Lannon & Walsh, 2020); (Vuorinen & Martinsuo, 2019); (Nguyen, Chileshe, Rameezdeen, & Wood, 2019); (Oliveira & Rabechini, 2019); (Burger, White, & Yearworth, 2019); (Gilchrist, Burton-Jones, & Green, 2018); (Di Maddaloni & Davis, 2018); (Lee et al., 2017); (Teo & Loosemore, 2017); (Xie et al., 2017); (Invernizzi, Locatelli, & Brookes, 2017); (Keeyes & Huemann, 2017); (Kivilä, Martinsuo, & Vuorinen, 2017); (Carvalho & Rabechini, 2017); (Yu et al., 2017); (Banihashemi, Hosseini, Golizadeh, & Sankaran, 2017); (Lin, Kelemen, & Kiyomiya, 2017); (Mok, Shen, & Yang, 2017); (Mok, Shen, Yang, & Li, 2017); (Butt, Naaranoja, & Savolainen, 2016); (Wang, Han, de Vries, & Zuo, 2016); (van Fenema, Rietjens, & van Baalen, 2016); (zhao Liu, Zhu, Wang, & Huang, 2016); (Yang, Zou, & Wang, 2016); (Xue, Zhang, Zhang, Yang, & Li, 2015); (Shi, Liu, Zuo, Pan, & Ma, 2015); (Yang, 2014); (Guo et al., 2014); (Müller et al., 2014); (Alzahrani & Emsley, 2013); (Yang, Shen, Ho, Drew, & Xue, 2011); (Edum-Fotwe & Price, 2009); (Baba et al., 2021)	Community engagement; Infrastructure megaprojects; Efficiency; IT project portfolio; Knowledge; Social capital; Open innovation; Partner selection; Adaptive; Infrastructure deliveries; Project stakeholders; Influence strategies; Trust; Front-end workshop; Conflict management; Social capital; Cultural building project; Social network analysis; Communication; Construction project; Public reaction; Social impact; Social risk management; Green building project; Social network analysis
Survey	(Silvius & Schipper, 2020); (Liu et al., 2018); (Wang et al., 2017); (Joslin & Müller, 2016); (Wu, Wang, Zou, & Fang, 2016); (Heravi et al., 2015); (Fernandes, Ward, & Araújo, 2015); (Zeng, Ma, Lin, Zeng, & Tam, 2015); (Verweij, 2015); (Zou, Zhang, & Wang, 2007)	Behavior; Project management; Sustainable development; Environmental responsibility; Project life cycle; Social responsibility
Theoretical-Conceptual	(Daniel & Daniel, 2019); (Gemünden, Lehner, & Kock, 2018); (Demirkesen & Ozorhon, 2017); (Lin, Zeng, Ma, Zeng, & Tam, 2017); (Ma, Zeng, Lin, Chen, & Shi, 2017); (Dyer, 2017); (Florice, Michela, & Piperca, 2016); (Mazur & Pisarski, 2015)	Performance; Self-organizing; Strategic planning; Construction projects; Social responsibility; Complexity

Source: Authors (2020).

#### 4.2.1. Stakeholders and Sustainability in Projects

Currently, there is an increase in pressure on companies to incorporate sustainability-related objectives, practices, and policies, one of reasons is that governments, society, and some companies are increasingly aware of their responsibilities and need to contribute to sustainable development (Aarseth et al., 2017).

Aarseth et al., (2017) highlight that studies on sustainability in the context of projects are incipient and fragmented. Studies in this area have grown in recent years, highlighting the importance of project management responsibly and sustainably (Aarseth et al., 2017).

In some studies, stakeholder management is implicitly defined in the context of sustainable development, and to be able to understand the needs and challenges of society and other stakeholders, their needs, in general, must be well identified and properly managed (Eskerod and Huemann, 2013).

Stakeholder management in the context of sustainability is an emerging topic in academic literature (Jensen & Sandström, 2011; Porter & Kramer, 2011).

For Lehtinen and Aaltonen (2020) the management of external stakeholders must be carried out by internal stakeholders. Which are involved by the project manager through three organizational solutions, governance, dynamism, and values.

Governance provides an adequate structure to manage stakeholders, dynamism facilitates the identification of opportunities while values are related to cooperation. The authors argue that the involvement of external stakeholders is fundamental to the success of the project (Lehtinen and Aaltonen, 2020).

In this context, project management is concerned with meeting or exceeding stakeholder needs and expectations, i.e., identified and unidentified requirements, and balancing these among stakeholders if the requirements are competing (PMI, 2017).

Sustainability and project management have been addressed in different research, but studies on the intersection between these two fields are considered a challenge for scholars due to the scarcity of sources (Martens and Carvalho, 2017).

The authors Aarseth et al. (2017) reinforced that although the literature on sustainability has grown in recent times, the context of sustainability in projects has not been sufficiently explored.

However, within the context analyzed, it is possible to understand that sustainability is relevant to the projects and the stakeholders have a strong influence on the project definition, execution, and implementation of the project, but not only regarding the characteristics of the project, also in the sustainability's dimensions of TBL.

#### 4.2.2 Stakeholders Influence

Projects affect and are influenced by different stakeholders and depend a lot on their contributions, skills, and abilities to carry out the activities (Aaltonen and Kujala, 2016).

One of the main capabilities of project-based companies has become a good understanding of their stakeholders, their influences, and the planning of their engagement strategies to serve them (Aaltonen and Kujala, 2016). Furthermore, stakeholder satisfaction is considered a factor for the project's success (Joslin and Müller, 2016).

Some authors explored the influence of stakeholders on projects, even reaching issues of sustainability (Aaltonen and Kujala, 2016; Mok et al., 2015). According to the authors, Mok, Shen and Yang (2015) projects are influenced by stakeholders.

External stakeholders have interests that can be influenced at different scales by different factors, such as local culture, media, political systems, and standards (Dooms, Verbeke, and Haezendonck, 2013). These stakeholders are constantly discussed in the research, as they are covered and subject to the effects of the environment (Aaltonen and Kujala, 2016).

The authors Aaltonen & Kujala (2016) explained in their research that stakeholder relations, especially regarding large and complex projects, there is greater exposure to a broad socio-political environment and the demands and pressures from external stakeholders, such as community groups, residents, landowners, environmentalists, regulatory agencies and local and national governments (Aaltonen and Kujala, 2010, 2016).

Li et al. (2012) revealed that the government typically emphasizes the benefits generated by the project, but usually the community focuses on sustainable land use, pressure groups are concerned with maintaining ecological and environmental sustainability and affected groups (Li et al., 2012).

External stakeholders may not necessarily affect project inputs, but they can affect project execution, therefore, managers should not underestimate the influence of external stakeholders on projects (Nguyen et al., 2019). Thus, the lack of an appropriate method for managing stakeholders can cause losses to project management (Di Maddaloni and Davis, 2017). According to Aaltonen and Kujala (2010), stakeholders have important and strategic positions in a project. The structure developed by the authors identifies positions related to the favorable positioning of the project, in which they seek collaboration, as well as conflict positions in which there are conflicts between the stakeholders and the project.

The authors Nguyen et al. (2019) developed a theoretical framework of stakeholder strategic actions. It is possible to observe that the stakeholders' influence factors are aligned with those described by Aaltonen and Kujala (2010).

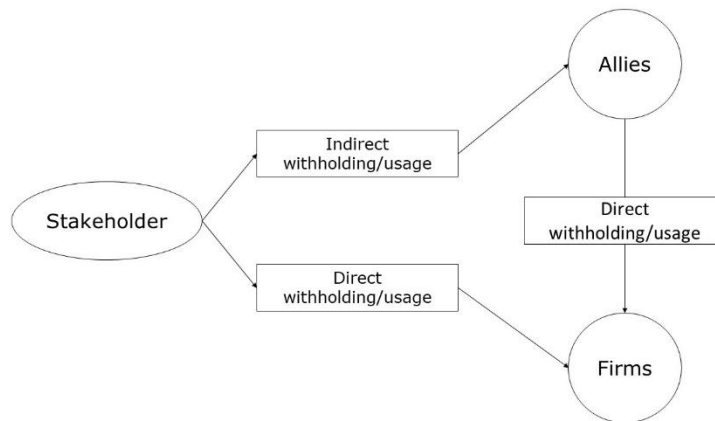


Figure 5 - A synthesis of stakeholders' specific influence strategies

This model shows three generic strategies: direct, lobbying, and bolstering (Nguyen et al., 2019). Initially, the authors address those stakeholders can exert direct and indirect influence on the project, either by directly controlling essential inputs and indirectly by persuading allies that may affect the project.

The authors also demonstrate that stakeholders have different ways of influencing the project, including letter-writing campaign, stakeholder resolution, boycott, litigation, lobbying, communication, partnership, multi-stakeholder dialogue and blockade (Nguyen et al., 2019).

Within the context of sustainability, Martens and Carvalho (2017) mentioned that related to stakeholder management they suggest in their research as variables to be analyzed for the stakeholder's factors: relationships with society; management of human rights; stakeholders management (society, employee, suppliers, and contractors); relationships with the local community; relationships with suppliers and contractors; responsibility with products and services; engagement of stakeholders and labor practices. It is possible to observe that these items are directly related to the TBL factors (Social, Environmental, Financial), for example, the related factors with society and local community are linked to the social factor. Liability for products and services can be related to environmental factors. Finally, relationship issues with suppliers and contractors can be directly related to financial issues.

#### 4.2.3 Environmental challenges related to project's external stakeholders and sustainability

At the project level, the impact of sustainability on project management tends to have a greater degree of variety (Sabini, Muzio, and Alderman, 2019). However, sustainable projects must be managed to take into consideration the planning, monitoring, and control of project delivery and support processes, environmental, economic, and social aspects of the life cycle of the resources, processes, deliveries, and effects of the project, to obtain benefits for the stakeholders (Silvius and Schipper, 2014).

Improving the effective involvement of stakeholders not only helps collaboration by them in the project but also facilitates a possible reduction of negative environmental impacts and increases the economic sustainability and quality of the project (Heravi et al., 2015).

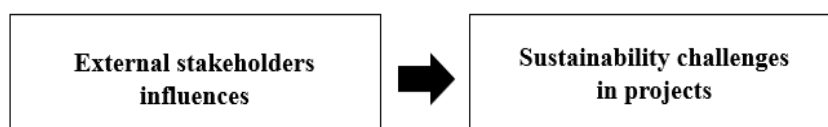


Figure 6 - Main research finding

However, in projects there are several challenges to achieve an effective development, as mentioned in the literature, to identify properly who are the stakeholders, especially about social aspects of the projects; manage communication in the case of many stakeholders involved; properly balance the interests of all stakeholders; knowing how to listen to all stakeholders, involving stakeholders and carry out projects that bring benefits to society or the place where the project is being implemented.

In addition, as good practices it is suggested that the projects are implemented concerning laws; carrying out its activities with a transparent, fair, and ethical approach (Silvius and Schipper, 2014).

## 5. CONCLUSIONS

This study has a noteworthy contribution to external stakeholders and sustainability in a project management context, contributing to the literature in bridging those topics and focusing on the challenges of mapping and dealing with those during project development. Data was gathered from 83 articles to answer the research question exploring how the literature identifies external stakeholders, manages, and monitors them in a sustainability perspective during the project development. It identifies the stakeholder influence on sustainability issues in projects and the main environmental challenges faced.

This study presents limitations related to the research methods selected. First, the sampling strategy provides constraints on the sample related to the search strings and logical operators applied. The application of the research's exclusion criteria brings subjectivity to the analysis, although the redundancy in the study minimizes this issue.

External stakeholders have an important paper in the project in general and can influence the projects in various ways and related to them there are several dimensions, factors, and uncertainties that must be well evaluated (Aaltonen and Kujala, 2016). What needs to be considered, evaluated, and treated by organizations in general to avoid damages and losses.

The literature on sustainability and stakeholders is closely associated with the management of megaprojects. Such projects, by their proportion, raise the need to identify stakeholders, even though it is not an easy task (Zhou and Mi, 2017).

Sustainability is present in the debate on the importance of integrating external stakeholders, who are increasingly demanding about responsible project management, care for the environment and society.

The social dimensions of sustainability are the least investigated by the literature and they lack analysis and are affected stakeholders of high influence within the project.

The main area that debates on the management of external stakeholders and sustainability is civil construction, mainly in megaprojects, in which the management of these agents becomes fundamental for the success of the project.

When it comes to the relationship between external stakeholders and sustainability, projects that have public-private partnerships (PPP) are most addressed (El-Gohary, Osman, and El-Diraby, 2006). In these projects, stakeholders have a greater influence on the project's success.

Therefore, we recommend future researchers to perform a case study or develop a questionnaire in a way to understand and provide an update to the literature in best practices related to how project managers are considering the sustainability aspects during a construction project. As previously mentioned, the dimensions of sustainability are the least explored by the literature and so in practice.

It is also important to mention that the lens of future studies shall be focused not only on the risks associated with the financial and environmental aspects of it, however, to the social aspect of it including but not limited to the fringe stakeholders of a project that in most cases are not appropriate mapped or considered in a social mitigation context.

## REFERENCES

Aaltonen, K. (2011), "Project stakeholder analysis as an environmental interpretation process", *International Journal of Project Management*, Vol. 29, No. 2, pp. 165–183.

<https://doi.org/10.1016/j.ijproman.2010.02.001>

- Aaltonen, K. and Kujala, J. (2010), "A project lifecycle perspective on stakeholder influence strategies in global projects", *Scandinavian Journal of Management*, Vol. 26, No. 4, pp. 381–397. <https://doi.org/10.1016/j.scaman.2010.09.001>
- Aaltonen, K. and Kujala, J. (2016), "Towards an improved understanding of project stakeholder landscapes", *International Journal of Project Management*, Vol. 34, No. 8, pp. 1537–1552. <https://doi.org/10.1016/j.ijproman.2016.08.009>
- Aaltonen, K., Kujala, J., Havela, L. and Savage, G. (2015), "Stakeholder Dynamics during the Project Front-End: The Case of Nuclear Waste Repository Projects", *Project Management Journal*, Vol. 46, No. 6, pp. 15–41. <https://doi.org/10.1002/pmj.21549>
- Aarseth, W., Ahola, T., Aaltonen, K., Økland, A. and Andersen, B. (2017), "Project sustainability strategies: A systematic literature review", *International Journal of Project Management*, Vol. 35, No. 6, pp. 1071–1083. <https://doi.org/10.1016/j.ijproman.2016.11.006>
- Achterkamp, M. C. and Vos, J. F. J. (2007), "Critically identifying stakeholders", *Systems Research and Behavioral Science*, Vol. 24, No. 1, pp. 3–14. <https://doi.org/10.1002/sres.760>
- Ahola, T., Ståhle, M. and Martinsuo, M. (2021), "Agency relationships of project-based firms", *International Journal of Project Management*. <https://doi.org/10.1016/j.ijproman.2021.06.005>
- Aguinis, H. and Glavas, A. (2012), "What We Know and Don't Know About Corporate Social Responsibility", *Journal of Management*, Vol. 38, No. 4, pp. 932–968. <https://doi.org/10.1177/0149206311436079>
- Atkinson, R. (1999), "Project management: Cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria", *International Journal of Project Management*, Vol. 17, No. 6, pp. 337–342. [https://doi.org/10.1016/S0263-7863\(98\)00069-6](https://doi.org/10.1016/S0263-7863(98)00069-6)
- Baba, S. and Mohammad, S. Young, C. (2021), "Managing project sustainability in the extractive industries: Towards a reciprocity framework for community engagement. *International Journal of Project Management*, Vol. 39, No. 8, pp. 887-901. <https://doi.org/10.1016/j.ijproman.2021.09.002>
- Besser Freitag, A.E., Anholon, R., Martins de Oliveira, V. and Larrain, T. V. (2017), "Integration of concepts about lean construction, sustainability and life cycle of buildings: a literature review", *Brazilian Journal of Operations & Production Management*, Vol. 14, No. 4, pp. 486. <https://doi.org/10.14488/bjopm.2017.v14.n4.a5>
- Campos, L.P.O.A. Araujo, F.O., Freitas, R.S. de and Abreu, C.G.S. (2018), "Perceptual analysis of heterogeneous stakeholders on the impact of the Rio 2016 games in the territory of Lagoa Rodrigo de Freitas", *Brazilian Journal of Operations & Production Management*, Vol.15, No. 4, pp. 576–587. <https://doi.org/10.14488/bjopm.2018.v15.n4.a11>
- Carvalho, M.M., Fleury, A. and Lopes, A.P. (2013), "An overview of the literature on technology roadmapping (TRM): Contributions and trends", *Technological Forecasting and Social Change*, Vol. 80, No. 7, pp. 1418–1437. <https://doi.org/10.1016/j.techfore.2012.11.008>
- Cleland, D.I. (1986), "Project Stakeholder Management. *Project Management Journal*", Vol. 17, No. 4, pp. 36–44. Retrieved from <https://www.pmi.org/learning/library/project-stakeholder-management-5216>
- Clifton, D. and Amran, A. (2011), "The Stakeholder Approach: A Sustainability Perspective", *Journal of Business Ethics*, Vol. 98, No. 1, pp. 121–136. <https://doi.org/10.1007/s10551-010-0538-6>

- Di Maddaloni, F. and Davis, K. (2017), "The influence of local community stakeholders in megaprojects: Rethinking their inclusiveness to improve project performance", *International Journal of Project Management*, Vol. 35, No. 8, pp. 1537–1556. <https://doi.org/10.1016/j.ijproman.2017.08.011>
- Di Vaio, A., Palladino, R., Pezzi, A. and Kalisz, D.E. (2021), "The role of digital innovation in knowledge management systems: A systematic literature review", *Journal of Business Research*, Vol. 123, pp. 220–231. <https://doi.org/10.1016/j.jbusres.2020.09.042>
- Donaldson, T. and Preston, L. E. (1995), "The Stakeholder Theory of the Corporation: concepts, evidence, and implications", *Academy of Management Review*, Vol. 20, No. 1, pp. 65–91. <https://doi.org/10.2307/258887>
- Dooms, M., Verbeke, A. and Haezendonck, E. (2013), "Stakeholder management and path dependence in large-scale transport infrastructure development: The port of Antwerp case (1960-2010)", *Journal of Transport Geography*, Vol. 27, pp. 14–25. <https://doi.org/10.1016/j.jtrangeo.2012.06.002>
- Duriau, V. J., Reger, R. K. and Pfarrer, M. D. (2007), "A Content Analysis of the Content Analysis Literature in Organization Studies: Research Themes, Data Sources, and Methodological Refinements", *Organizational Research Methods*, Vol. 10, No. 1, pp. 5–34. <https://doi.org/10.1177/1094428106289252>
- Edum-Fotwe, F.T. and Price, A.D.F. (2009), "A social ontology for appraising sustainability of construction projects and developments", *International Journal of Project Management*, Vol. 27, No. 4, pp. 313–322. <https://doi.org/10.1016/j.ijproman.2008.04.003>
- El-Gohary, N.M., Osman, H. and El-Diraby, T.E. (2006), "Stakeholder management for public private partnerships", *International Journal of Project Management*, Vol. 24, No. 7, pp. 595–604. <https://doi.org/10.1016/j.ijproman.2006.07.009>
- Elkington, J. (1997), "Cannibals with forks – Triple bottom line of 21st century business", Stoney Creek, CT: New Society Publishers.
- Eskerod, P. and Huemann, M. (2013), "Sustainable development and project stakeholder management: what standards say", *International Journal of Managing Projects in Business*, Vol. 6, No. 1, pp. 1753–8378. <https://doi.org/10.1108/17538371311291017>
- Eskerod, P. and Larsen, T. (2018), "Advancing project stakeholder analysis by the concept 'shadows of the context'", *International Journal of Project Management*, Vol. 36, No. 1, pp. 161–169. <https://doi.org/10.1016/j.ijproman.2017.05.003>
- Fliaster, A. and Kolloch, M. (2017), "Implementation of green innovations - The impact of stakeholders and their network relations", *R&D Management*, Vol. 47, No. 5, pp. 689–700. <https://doi.org/10.1111/radm.12257>
- Freeman, R.E. (1984), "Strategic Management: A Stakeholder Approach, Pitman, London and Boston, MA.
- Gemünden, H.G. (2016), "Project Governance and Sustainability — Two Major Themes in Project Management Research and Practice", *Project Management Journal*, Vol. 47, No. 6, pp. 3–6. <https://doi.org/10.1177/875697281604700601>
- Goel, P. (2010), "Triple bottom line reporting: An analytical approach for corporate sustainability", *Journal of Finance, Accounting, and Management*, Vol. 1, No. 1, pp. 27–42.
- Guo, F., Chang-Richards, Y., Wilkinson, S. and Li, T.C. (2014), "Effects of project governance structures on the management of risks in major infrastructure projects: A comparative analysis", *International Journal of Project Management*, Vol. 32, No. 5, pp. 815–826. <https://doi.org/10.1016/j.ijproman.2013.10.001>



- Heravi, A., Coffey, V. and Trigunaryah, B. (2015), "Evaluating the level of stakeholder involvement during the project planning processes of building projects", *International Journal of Project Management*, Vol. 33, No. 5, pp. 985–997. <https://doi.org/10.1016/j.ijproman.2014.12.007>
- Huemann, M., Keegan, A. and Müller, R. (2016), "Managing the project-based organization", *International Journal of Project Management*, Vol. 34, No. 8, pp. 1670–1671. <https://doi.org/10.1016/j.ijproman.2016.09.006>
- Jensen, T. and Sandström, J. (2011), "Stakeholder Theory and Globalization: The Challenges of Power and Responsibility", *Organization Studies*, Vol. 32, No. 4, pp. 473–488. <https://doi.org/10.1177/0170840611400290>
- Joslin, R. and Müller, R. (2016), "The relationship between project governance and project success", *International Journal of Project Management*, Vol. 34, No. 4, pp. 613–626. <https://doi.org/10.1016/j.ijproman.2016.01.008>
- Keays, L. A. and Huemann, M. (2017), "Project benefits co-creation: Shaping sustainable development benefits", *International Journal of Project Management*, Vol. 35, No. 6, pp. 1196–1212. <https://doi.org/10.1016/j.ijproman.2017.02.008>
- Lehtinen, J. and Aaltonen, K. (2020), "Organizing external stakeholder engagement in inter-organizational projects: Opening the black box", *International Journal of Project Management*, Vol. 38, No. 2, pp. 85–98. <https://doi.org/10.1016/j.ijproman.2019.12.001>
- Li, T. H. Y., Ng, S. T. and Skitmore, M. (2012), "Conflict or consensus: An investigation of stakeholder concerns during the participation process of major infrastructure and construction projects in Hong Kong. *Habitat International*, Vol. 36, No. 2, pp. 333–342. <https://doi.org/10.1016/j.habitatint.2011.10.012>
- Littau, P., Jujagiri, N. J. and Adlbrecht, G. (2010), "25 Years of Stakeholder Theory in Project Management Literature (1984-2009)", *Project Management Journal*, Vol. 41, No. 4, pp. 17–29. <https://doi.org/10.1002/pmj.20195>
- Marques, V.D.L., Filho, C.A. and Pereira, F.N. (2018), "Tools for the strategic management of stakeholders in civil construction", *Brazilian Journal of Operations & Production Management*, Vol. 15, No. 4, pp. 595–609. <https://doi.org/10.14488/bjopm.2018.v15.n4.a13>
- Martens, M.L. and Carvalho, M.M. (2017), "Key factors of sustainability in project management context: A survey exploring the project managers' perspective", *International Journal of Project Management*, Vol. 35, No. 6, pp. 1084–1102. <https://doi.org/10.1016/j.ijproman.2016.04.004>
- Mok, K.Y., Shen, G.Q. and Yang, J. (2015), "Stakeholder management studies in mega construction projects: A review and future directions", *International Journal of Project Management*, Vol. 33, No. 2, pp. 446–457. <https://doi.org/10.1016/j.ijproman.2014.08.007>
- Morgenstern, E.K. (2007), "The origin and early application of the principle of sustainable forest management", *Forestry Chronicle*, Vol. 83, pp. 485–489. <https://doi.org/10.5558/tfc83485-4>
- Nguyen, Q.T. and Lee, M.Y. (2019), "Capturing the cultural boundary among the members' interactions in a multinational workgroup: An evidence from System for the Multiple Level Observation of Groups analysis", *Cogent Business and Management*, Vol. 6, No. 1, pp. 1–26. <https://doi.org/10.1080/23311975.2019.1685062>
- Nguyen, T.H.D., Chileshe, N., Rameezdeen, R. and Wood, A. (2019), "External stakeholder strategic actions in projects: A multi-case study", *International Journal of Project Management*, Vol. 37, No. 1, pp. 176–191.

<https://doi.org/10.1016/j.ijproman.2018.12.001>

- Olander, S. (2007), "Stakeholder impact analysis in construction project management", *Construction Management and Economics*, Vol. 25, No. 3, pp. 277–287. <https://doi.org/10.1080/01446190600879125>
- Olander, S. and Landin, A. (2005), "Evaluation of stakeholder influence in the implementation of construction projects", *International Journal of Project Management*, Vol. 23, No. 4, pp. 321–328. <https://doi.org/10.1016/j.ijproman.2005.02.002>
- PMI, P.M.I. (2017), "*Guia do Conhecimento em Gerenciamento de Projetos (GUIA PMBOK®)*" 6 ed. P. M. Institute, Ed.). Retrieved from [www.PMI.org](http://www.PMI.org)
- Porter, M.E. and Kramer, M.R. (2011), "The Big idea Creating Shared Value how to reinvent capitalism-and unleash a wave of innovation and growth. *Harvard Business Review*, 01–17.
- Reed, M.S. (2008, October 1), "Stakeholder participation for environmental management: A literature review", *Biological Conservation*, Vol. 141, pp. 2417–2431. <https://doi.org/10.1016/j.biocon.2008.07.014>
- Robèrt, K.H., Schmidt-Bleek, B., Aloisi De Larderel, J., Basile, G., Jansen, J. L., Kuehr, R. Wackernagel, M. (2002), "Strategic sustainable development - Selection, design and synergies of applied tools", *Journal of Cleaner Production*, Vol. 10, No. 3, pp. 197–214. [https://doi.org/10.1016/S0959-6526\(01\)00061-0](https://doi.org/10.1016/S0959-6526(01)00061-0)
- Sabini, L., Muzio, D. and Alderman, N. (2019), "25 years of 'sustainable projects'. What we know and what the literature says", *International Journal of Project Management*, Vol. 37, No. 6, pp. 820–838. <https://doi.org/10.1016/j.ijproman.2019.05.002>
- Sallinen, L., Ahola, T. and Ruuska, I. (2011), "Governmental Stakeholder and Project Owner's Views on the Regulative Framework in Nuclear Projects", *Project Management Journal*, Vol. 42, No. 6, pp. 33–47. <https://doi.org/10.1002/pmj.20270>
- Silvius, A. J. G., Kampinga, M., Paniagua, S. and Mooi, H. (2017), "Considering sustainability in project management decision making; An investigation using Q-methodology", *International Journal of Project Management*, Vol. 35, No. 6, pp. 1133–1150. <https://doi.org/10.1016/j.ijproman.2017.01.011>
- Silvius, A.J.G. and Schipper, R.P.J. (2014), "Sustainability in Project Management Competencies: Analyzing the Competence Gap of Project Managers", *Journal of Human Resource and Sustainability Studies*, Vol. 02, No. 02, pp. 40–58. <https://doi.org/10.4236/jhrss.2014.22005>
- Steurer, R., Langer, M.E., Konrad, A. and Martinuzzi, A. (2005), "Corporations, stakeholders and sustainable development I: A theoretical exploration of business-society relations. *Journal of Business Ethics*, Vol. 61, No. 3, pp. 263–281. <https://doi.org/10.1007/s10551-005-7054-0>
- Takey, S.M. and Carvalho, M.M. (2016), "Fuzzy front end of systemic innovations: A conceptual framework based on a systematic literature review", *Technological Forecasting and Social Change*, 111, pp. 97–109. <https://doi.org/10.1016/j.techfore.2016.06.011>
- Yin, R.K. (2001), "*Estudo de Caso: Planejamento e Métodos* (2 ed.)". Retrieved from [https://saudeglobaldotorg1.files.wordpress.com/2014/02/yinmetodologia\\_da\\_pesquisa\\_estudo\\_de\\_caso\\_yin.pdf](https://saudeglobaldotorg1.files.wordpress.com/2014/02/yinmetodologia_da_pesquisa_estudo_de_caso_yin.pdf)
- Zhou, Z. and Mi, C. (2017), "Social responsibility research within the context of megaproject management: Trends, gaps and opportunities", *International Journal of Project Management*, Vol. 35, No. 7, pp. 1378–1390.

<https://doi.org/10.1016/j.ijproman.2017.02.017>

**Author contributions:** All authors contributed equally to this paper.