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Exploring stakeholder engagement network behavior: Strategic and managerial implications for corporate social responsibility

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Abstract

This paper investigates the relationship between Stakeholder Engagement (SE) and Corporate Social Responsibility (CSR), approaching CSR as a complex system made up of components and interactions. Adopting a System Thinking approach to analyze CSR in a stakeholders-company network, explorative research is conducted through three stages: (1) a critical literature review aimed to identify the components of the CSR system model, (2) the development of the dataset and of the Causal Loop Diagram (CLD) model, (3) the analysis of the CSR behavior in light of the 'system archetypes' underpinning the system. The analysis reveals both the structure and the dynamics of CSR and explain its behavior in light of the stakeholder engagement network variables. Findings from this research underscore the existence of six feedback loops, which characterize the relation CSR-SE. The 'company-stakeholder fit' acts as a growth engine for the stakeholder engagement network, however other balancing dynamics (e.g., detriment of business objectives) require a tradeoff between Social and Business orientation. This paper contributes to a more profound understanding of the relation between CSR and stakeholder engagement, showing in particular the link between CSR and SE under the assumption of stakeholder-company network. The insights provided serve as a guide for managers and policymakers to navigate the complex dynamics of SE to inform effective strategies of CSR based on network structural actions.

KEYWORDS
casual loop diagram, CSR, document model building, stakeholder engagement, system thinking

1 | INTRODUCTION

Over the years, firms have realized that they have to focus not only on maximizing profits but also on satisfying their stakeholders to achieve growth and a long-lasting competitive position (Freeman et al., 2017; Sulkowski et al., 2018). This realization has led to a greater emphasis on stakeholder engagement, as companies understand the importance of building and maintaining positive relationships with their stakeholders (Zwikael et al., 2012). Stakeholder engagement plays a crucial role in enabling Corporate Social Responsibility (CSR) initiatives (Greenwood, 2007) and can lead to improved reputation, brand value, and long-term sustainability for companies (Camilleri, 2019).

However, the increasing complexity of stakeholder relations presents challenges for companies seeking to engage with their stakeholders to increase CSR. Stakeholders are diverse, with different goals, values, and priorities, requiring tailored approaches to engagement and communication (Yi et al., 2022). Moreover, stakeholders are often interconnected, and a company's interaction with one stakeholder can impact its engagement with other

stakeholders (Jones et al., 2018). The stakeholder network, therefore, rises as crucial role in shaping the dynamics of stakeholder engagement.

Despite the growing attention to stakeholder engagement existing studies often focus on the dyadic relationship between a company and an individual stakeholder, overlooking the broader context of the stakeholder network (Skilton & Purdy, 2017; Tantalo & Priem, 2016). This limited perspective hinders a deep and systemic understanding of the relation between stakeholder engagement and CSR.

This study aims to shed light on the relation between stakeholder engagement (SE) and CSR adopting a complex system approach of study. In particular, using System Thinking approach, we uncover the mechanisms, triggers, and strategies that characterize the relation SE-CSR.

To explore this research objective, we leverage on the Document Model Building (DMB) methodology, which allows us to create a Causal Loop Diagram model of the SEN (Haji Gholam Saryazdi et al., 2020; Linzalone et al., 2023). This modeling approach enables a holistic analysis of both CSR and SE theoretical components. Firstly, we conducted a critical literature review (Snyder, 2019; Torraco, 2005) to identify key components of *stakeholder engagement network* and *CSR*. The cause-effect relations linking the components were identified and modeled within a Causal Loop Diagram (CLD) (Forrester, 1971; Lane, 2000, 2008; Sterman, 2000); we then obtained a CSR system model. The CLD shows the system structure (Kiani et al., 2009; Maani & Cavana, 2007; Senge, 1990; Sterman, 2000) highlighting the *feedback loops* driving the behavior of the system. Finally, an analysis of the CSR system model is carried out through the *system archetypes* (Monat & Gannon, 2015; Senge, 1990) to link its behavior to the SE network.

We examine how factors such as stakeholder homogeneity, network density, organizational centrality, and CSR performance target influence stakeholder engagement. We also investigate the role of communication quality, responsible leadership, and organizational social values in shaping stakeholder behavior.

The findings from our analysis provide valuable insights into the dynamics of stakeholder engagement and its implications for CSR practices. We discuss the managerial drivers, strategies, and implications for effective stakeholder engagement, taking into account the complexities of the stakeholder network.

By examining the stakeholder engagement network as a complex and dynamic system, this study contributes to both research and practice. For researchers, it provides a more comprehensive understanding of stakeholder behavior and the dynamics of stakeholder engagement. For organizations, it offers insights into how to more effectively manage stakeholder relationships, enhance reputation and performance, and contribute to a more sustainable future.

The remainder of the paper is organized as follows. Section 2 provides a brief review of the literature on stakeholder engagement and CSR, focusing on the key conceptual elements. Section 3 outlines the research methodology, explaining the Document Model Building approach in detail. Section 4 presents the analysis and findings emerging from the Causal Loop Diagram model, highlighting the mechanisms and triggers driving stakeholder behavior within the SEnetwork. Section 5 discusses the results and their implications for both theory and practice. Finally, the concluding section 6 summarizes the insights, limitations, and future research directions of the study.

2 | THEORETICAL BACKGROUND

2.1 | Corporate social responsibility

The concept of Corporate Social Responsibility (CSR) has a long history in scientific literature, starting from the 1950s (Bowen, 1953) which marks the beginning of the modern era of CSR (Carroll, 1999). During these years, different definitions have been provided both in the scientific literature (Bowen, 1953; Carroll, 1999; Dahlsrud, 2006; Kraus & Brtitzelmaier, 2012) and by the main governmental institutions (European Commission, 2002; World Business Council for Sustainable Development, 2000).

In fact, Corporate Social Responsibility (CSR) emerges in the Strategic management literature in the 50s (Bowen, 1953). It is "*the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as the local community and society at large*" (Dahlsrud, 2006). These definitions highlight the key elements of CSR, which include a focus on ethical and sustainable business practices, contributions to economic and social development, and the consideration of the impacts of business activities on stakeholders and the wider community (Rahman, 2011).

Companies committed to CSR contribute positively to the concerns of various key stakeholders, thereby gaining their support and becoming more sustainable and effective in the long-term business performance.

CSR has four dimensions according to Carroll (1991): economic, social, philanthropy, and environmental. These dimensions include practices such as promoting investments with social and environmental value, offering products and services to the wider population, corporate volunteering, and activities aimed at reducing the company's environmental impact (Table 1).

CSR is a powerful driver of value creation by improving a company's reputation (Taghian et al., 2015), reducing risk (Benlemlih & Girerd-Potin, 2017), driving innovation (Hull & Rothenberg, 2008), and attracting and retaining top talent (Bhattacharya et al., 2008).

A firm's successful performance in CSR relies on its ability to develop, nurture, and maintain trustful and mutually respectful stakeholder relations. Further, organizations often engage in a symbiotic relationship with society by reciprocating through CSR for the use of societal resources and stakeholder engagement (Wisse et al., 2018). In return, society, and employees as internal stakeholders, rewards the firm with recognition, brand loyalty, investment and employee commitment (De Silva & Lokuwaduge, 2021).

TABLE 1 CSR: Dimensions and inherent practices.

Dimension	Practice
Economic responsibility	To promote investments and funding with social and environmental value
	Careful management of environmental, social and governance risks
	Support funding of goods for the local wealth
	To comply with the higher possible ethical standards
Social responsibility	To offer products/services to the wider accessibility of people
	Contrast social exclusion and promote human rights
	Social Marketing campaigns
	Protection of employees, guarantee of a favorable working environment with responsible management
	Orientation toward continuous learning and a dynamic training path
Philanthropy	Corporate volunteering
	Sponsorship of charity events
	Donations to NGOs, nonprofit organizations, third sector entities, associations for social, environmental and cultural promotion
Environmental responsibility	Activities aimed at reducing the company's environmental impact, from production to distribution
	Help raise awareness and share best business practices
	Enable customers to transition to a low-carbon and environmentally friendly economy

CSR embraces the principle that companies driven by CSR strategies and performance are more sustainable and effective in business: by contributing positively to key stakeholder's concerns, CSR-driven organizations have the support of stakeholders. Hence, the financial performance of the companies is a consequence of the creation of value for the stakeholders. Stakeholder management, then, becomes the focus of the value creation process.

Stakeholder management recognizes the stakeholder as a key resource (Panda & Shirish, 2020) to plan and monitor CSR's performance and strategies. By engaging with stakeholders, organizations understand their concerns, interests, and needs, and regularly monitoring and evaluating their performance, organizations can ensure that they are creating value for all of their stakeholders (Khojastehpour & Shams, 2020).

On the contrary, when stakeholders are not engaged, they lack of support, or start opposition, to the organization; stakeholder is one major cause of challenge and failure for many companies (Aapaoja & Haapasalo, 2014; Sutterfield et al., 2006; The Standish Group, 2020). Stakeholders are a cause of failure in the 57% of unsuccessful projects worldwide (Flyvbjerg & Budzier, 2011), thus impacting competitiveness and sustainability of project organizations.

Stakeholder management includes a set of activities such as stakeholder identification, stakeholder analysis, stakeholder communication, stakeholder engagement (Yang, 2014).

2.2 | Stakeholder engagement for corporate social responsibility

Stakeholder engagement is the core of stakeholder management, being the practices that an organization undertakes to involve stakeholders in a positive manner in organizational activities (Greenwood, 2007). Stakeholder engagement refers to the process of building and maintaining relationships with stakeholders (Mitchell et al., 1997). It embodies a set of issue to deal with in order to a practical management and exploitation (Watson et al., 2018). Mitchell et al. (2022, p. 77) formally define stakeholders' engagement as "*the interaction among a firm and its stakeholders that addresses knowledge problems to improve correspondence in understanding between managers and stakeholders, thereby to assist in resolving ethical challenges faced by manager*".

Stakeholder engagement constitutes a pivotal practice within organizations, serving as a means to realize CSR objectives (Bendell & Nesij Huvaj, 2020; Clarkson, 1995; Lauesen, 2013).

Stakeholder engagement, despite its relevance for CSR, has several issues to face with:

- stakeholders are tied together and with the focal organization, through complex structure of social, information, and influential relations, makes hard and elusive to control the network

of stakeholder and effectively engage them (Frostenson & Prenkert, 2015);

- stakeholders are heterogeneous, often adversarial in terms of claims and satisfaction, thus posing critical tradeoffs for an effective attainment of CSR objectives (Yi et al., 2022).
- including as much stakeholders as possible, increase support and engagement, but conversely, as number and heterogeneity of stakeholders increase, expectations increase and dissatisfied stakeholders arise. This *stakeholder inclusiveness dilemma* (Eskerod et al., 2015), implies a careful tradeoff between inclusion (number of stakeholders) and relevance (stakeholders who possess the most critical resources for the organization's survival);

Evidence in both management and business ethics suggests that involving stakeholders leads to more ethical management practices. Nevertheless, the current understanding of stakeholder engagement may have limitations in addressing the tougher ethical issues faced by managers (Mitchell et al., 2022).

Literature widely addressed managerial implications of stakeholder engagement for CSR. When stakeholders are effectively engaged, they are more likely to support and advocate for an organization, which can lead to better outcomes. By engaging with stakeholders, organizations can gather valuable information and insights that can inform their decision-making processes (Caputo et al., 2021). This leads to better decision-making, as organizations can take into account the perspectives of all stakeholders when making strategic and operational decisions (Kurnia & Raharja, 2021). When stakeholders feel that they have been heard and their concerns have been addressed, they are more likely to support and engage with the organization (Robinson et al., 2011). Effective stakeholder engagement can also enhance an organization's reputation, as it demonstrates a commitment to transparency, accountability, and responsible business practices (Martin-de Castro, 2021; Romenti, 2010). Stakeholder engagement can also help organizations identify potential risks associated with their CSR initiatives and develop strategies to mitigate these risks. This can help organizations avoid negative consequences and improve their overall CSR performance (Karwowski & Raulinajtys-Grzybek, 2021). Stakeholder engagement can lead to increased accountability for organizations as it creates a sense of responsibility that can result in building trust and credibility with stakeholders (Skouloudis et al., 2012; Valentine & Fleischman, 2008). Companies that engage in open and transparent relationship with their stakeholders tend to have a more favorable reputation and a stronger company identity (Helmi et al., 2020). On the contrary, a lack of stakeholder engagement can lead to loss of support, opposition from stakeholders, and decreased competitiveness in the long term (Aapaoja & Haapasalo, 2014; Sutterfield et al., 2006; The Standish Group, 2020). Thus, stakeholder disengagement has been identified as a significant contributor to organizational challenges and failure. By interacting closely with their stakeholders, organizations can capture valuable insights to inform their decision-making processes (Caputo et al., 2021; Kurnia & Raharja, 2021). Conversely, when stakeholders perceive their concerns have been acknowledged and addressed, they are more likely to support and engage with the organization (Robinson et al., 2011).

Nonetheless, the efficacy of stakeholder engagement is best comprehended through the lens of three essential dimensions: cognitive, emotional, and behavioral engagement (Wilkin et al., 2018). Cognitive engagement signifies stakeholders' active participation in projects or activities, enhancing their understanding and knowledge of the core objectives and tasks at hand. Emotional engagement revolves around the degree of motivation and passion stakeholders invest in these projects or activities. Lastly, behavioral engagement pertains to stakeholders taking proactive roles in project implementation and decision-making processes.

The examination of stakeholder behavior in response to engagement practices holds significance on par with its complexity, presenting a formidable challenge for both corporations and academia. This complexity arises from the intricate web of relationships that interconnects an engaging organization (often referred to as the focal company or organization) and its stakeholders. These relationships are characterized by their influential nature, fostering continuous and mutual adaptation within the system, rendering it a dynamic entity. Consequently, the concept of behavior aptly aligns with the intricate system of stakeholders' responses to various pressures and influences.

Stakeholder engagement behavior encompasses the observable behavioral expressions of stakeholders in relation to their role-based interactions, activities, and relationships within the engagement context (Hollebeek et al., 2022). Understanding how stakeholders behave in response to orchestrated engagement practices is of paramount importance for a focal organization seeking to effectively engage its stakeholders. However, the study of stakeholder engagement behavior unfolds within a multifaceted network of relationships, heavily influenced by reciprocal dynamics with the central organization and other social influences emanating from stakeholders' engagement behavior (Hollebeek et al., 2022).

Remarkably, attempting to isolate and scrutinize the behavior of individual stakeholders in isolation proves challenging and limited in its insights. A more fruitful approach involves considering stakeholders' behavior within the broader network context, taking into account the substantial influence exerted by the engaging organization (the focal organization) and the intricate web of interdependencies among stakeholders. Given these complexities, it is therefore more appropriate to address the broader framework of *stakeholder engagement network behavior*. In doing so, we gain a more comprehensive understanding of how stakeholders collectively respond to engagement efforts, offering valuable insights for both theory and practice.

2.3 | Stakeholder engagement network behavior for corporate social responsibility

The behavior of stakeholders in networks is of particular importance for CSR. If the focal organization is able to drive stakeholder

behavior toward a supportive, by the mean of effective engagement practices, then it will attain CSR performance, which is even more positively related with organization's performance and sustainability (Beringer et al., 2012; Clarkson, 1995; Eskerod et al., 2015; Linzalone & Saganeiti, 2015).

Preliminarily, it is necessary to consider the concept of stakeholder behavior that is more than just the sum of its parts. It is a holistic 'system' effect produced by a complex network of agents, characterized by emergence, mutual adaptation, complexity, and bifurcation (Jackson, 2009; Poutanen et al., 2016; Windsor, 2010).

Companies are required to accommodate multiple, interdependent stakeholder demands, all while under the simultaneous influence of these stakeholders (Rowley, 1997). Leveraging on *Social Network Analysis* the impacts of entire stakeholder structures on organizational behavior can be examined (Rowley, 1997).

Every stakeholder connected to a focal organization is inherently interconnected through a social network, often referred to as a stakeholder network. These social networks represent consistent configurations of relationships among actors who rely on each other, typically emerging around policy issues or resource groupings. They are established, sustained, and modified through ongoing interactions, as described by Klijn et al. (1995). Yet, the exploration of this complex network and its interaction with CSR is far from simple due to a multitude of issues, such as the complexity of controlling the network and the diverse, often adversarial interests of stakeholders (Forrester, 1971; Frostenson & Prenkert, 2015; Mainardes et al., 2011; Poutanen et al., 2016; Yi et al., 2022).

Including more stakeholders does enhance support and engagement. However, with increased numbers and diversity of stakeholders come increased expectations and dissatisfaction, leading to a stakeholder inclusiveness dilemma (Eskerod et al., 2015). Organizations thus face a tradeoff between the quantity of stakeholders and the importance of those stakeholders who possess the most critical resources for the organization's survival.

As we delve into the operational aspects of the relationship between stakeholder engagement and CSR, it becomes apparent that addressing CSR as a complex system is imperative. Doing so allows for a dynamic analysis of CSR, as opposed to the static descriptions offered by existing linear models. Consequently, the approach that is taken in this study views CSR as an emergent behavior of a complex system of activities, which are in constant interaction with stakeholder engagement activities. This perspective, while challenging, holds the promise of providing a richer, more nuanced understanding of CSR and stakeholder engagement.

Indeed, numerous studies in managerial literature are beginning to perceive CSR as a complex system. This approach recognizes the multifaceted interactions, feedback loops, and system dynamics that are inherent in the relationship between stakeholder engagement and CSR activities. To understand the behavior of such a system, it becomes necessary to analyze it as a whole, taking into account all of its constituent parts and their interactions.

The concept of stakeholder behavior aligns well with this systems-based approach. Given the complexity of the stakeholder relations, the behavior of the system emerges from the interactions and mutual adaptations among its parts, making it a dynamic entity. While such complexity presents challenges, it also offers opportunities for more insightful analyses.

Existing literature, however, has primarily adopted a reductionist approach, examining individual components of the CSR-stakeholder engagement relationship without sufficiently accounting for the system as a whole. This approach, while providing valuable insights, tends to oversimplify the intricate interconnections within the system, resulting in a gap between our theoretical understanding of CSR and its practical implementation.

However, a handful of studies have begun to address CSR from a systems perspective. They have employed theoretical frameworks and analytical tools suitable for the examination of complex systems to unravel the intricate interplay of stakeholder engagement and CSR (Klijn et al., 1995; Mainardes et al., 2011; Poutanen et al., 2016; Rowley, 1997). These studies underscore the importance of recognizing CSR as an emergent property of a complex system, rather than as a set of discrete, linear processes.

In conclusion, while CSR and stakeholder engagement have traditionally been studied as separate entities with linear relationships, a systems perspective offers a more comprehensive understanding of these constructs. This approach sees CSR as the emergent behavior of a complex system of activities that interact with stakeholder engagement activities in a dynamic and nonlinear fashion.

Some studies address the behavior of stakeholders in organization's engagement practices; however, we aim to contribute to the exploration and explanation of the behavior of stakeholders in response to engagement practices exerted by a focal organization, compounding together *stakeholder engagement network* literature elements, with elements regarding the general theoretical frame of stakeholder engagement, by linking them according to cause-effect relations (i.e. by the mean of Causal Loop Diagram). We add on the existing literature shading light on the dynamics of stakeholder engagement behavior.

This issue is shaded in literature, which shows in turn an unbalance toward the 'static' and structural analysis of the stakeholder engagement network, rather than on its functional and dynamic changes over time.

Of course, the ground offered by the static and structural studies represents a solid preliminary base to address our research question; in this perspective the *stakeholder engagement* state-of-art literature is mature.

Preliminarily, it is necessary to agree on the nature of stakeholders' behavior: it is the overall 'system' effect of a complex network of agents. To explore its behavior, we cannot rely on single stakeholder analysis and following overlapping of the effects. Systems are characterized by emergence, mutual adaptation, complexity, bifurcation (Jackson, 2009; Poutanen et al., 2016; Windsor, 2010). We need to approach with network and complex systems models.

Several approaches have been employed to study stakeholder networks. Notably, Social Network Analysis (SNA) relies on quantitative data that captures several key aspects: such as the existence

and the strength of each connection, the overall density of the network, and the network's centrality (Papaluca & Tani, 2020).

SNA detects the more central stakeholder, that is the one who likely will influence the others and shape their behaviors, and the degree of influence across the network, determined by the *network density*.

This approach enables researchers to determine which stakeholders are central and how stakeholders group together (Marsden, 1990) (Figure 1).

Network density and actor centrality are two key concepts to understanding stakeholder behavior. Network density is a characteristic of the entire network, measures the proportion of actual ties relative to all possible ties among network members. As density increases, communication within the network tends to become more efficient. This implies that networks with dense connections are characterized by significant constraints on the actions of the focal organization (Rowley, 1997).

In turn, a focal organization in a densely tied network can strongly influence stakeholders' position (supportiveness vs. contrast), activity (intensity of action), behavior. Organization should be able to recognize and exploit key network structure properties, with suited CSR strategies.

Centrality measures refer to the position of an individual actor within the network and represent the influence (or power) of an actor with respect to others (Brass & Burkhardt, 1993; Wasserman & Galaskiewicz, 1994). Several centrality measures, like *Degree Centrality*, *betweenness* and *closeness* are presented in literature, representing the number of direct ties of each actor, the influence over what flows in the network, and how close a node is to all other nodes in the network, respectively (Brass & Burkhardt, 1993) (Table 2).

2.4 | Analyzing the stakeholder engagement network. Focusing the causal relations

System thinking is recognized as one of the most effective approaches to model and analyze complex systems (Forrester, 1961; Moellers et al., 2019; Sterman, 2000). It leverages on a set of guidelines, tools and conceptual elements to model the causal mechanisms underpinning the behavior of a complex system. Accordingly,

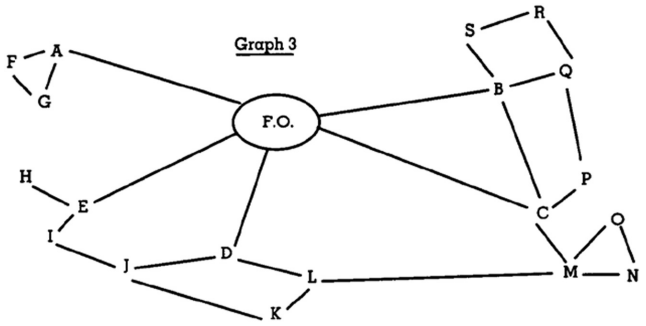


FIGURE 1 Model structure of a focal organization's (F.O.) and the stakeholder network.

the behavior emerges as a result of the system structure, that is the way in which the causal feedback loops are connected.

The patterns of combinations and connections give rise to system archetypes, that are causal patterns among variables, whose behavior is known.

In this way, 'real life' systems can be traced back to combinations of *archetypes*, and their behavior can be predicted and simulated. System archetypes' (Senge, 1990), also known as 'Common modes' (Sterman, 2000), represent foundational causal structures that lead to the development of predictable patterns or trends in a system's behavior over time.

Two main System Thinking approaches to model a complex system have been proposed in the literature, namely the Causal Loop Diagram (CLD) (Forrester, 1961; Giordano et al., 2007; Kiani et al., 2009; Lane, 2008; Sterman, 2000) and the Stock and Flow diagram (Duggan, 2016; Sterman, 2000).

In particular, CLD is well suited for wider scope qualitative analysis and comprises system elements represented as text, connected by arrows that symbolize causal links (Lane, 2000, 2008; Sterman, 2000). These arrows, carrying either positive (+) or negative (−) polarity, denote how a change in the cause brings about a change in the effect. This polarity is a function of the cause-and-effect relationship.

By illustrating the entire system model through a CLD, the feedback loops become evident. The feedback loops—either reinforcing (R) or balancing (B)—are critical as they determine the system's behavior and explain how and why it evolves over time (Cronin & Gonzalez, 2007; Maani & Cavana, 2007; Sterman, 1989). Reinforcing loops amplify external stimuli, whereas balancing loops dampen the stimuli. These two basic loop types—reinforcing and balancing—are responsible for the system's amplification and dampening behaviors. Real systems may encapsulate more complex structures, but Senge's 9 system archetypes (Senge, 1990) simplify the modeling process.

In terms of managerial literature that approaches CSR as a complex system, there are studies that delve into the intricate relationship between CSR and stakeholder engagement. In this context, CSR is a dynamic, interconnected system of elements that include stakeholders, organizational structures, processes, and external factors (Crilly & Sloan, 2012). Acknowledging these complexities and interdependencies underscores the necessity of effectively managing these relationships.

Stakeholder engagement is a subsystem of the CSR system, for managing the interactions and interdependencies between the organization and its stakeholders (Crilly & Sloan, 2012). Effective stakeholder engagement helps organizations understand the complex network of relationships, expectations, and influences among stakeholders, enabling them to navigate the CSR system more strategically.

With the lenses of System Thinking, CSR and stakeholder engagement give rise to emergent properties, such as trust, collaboration, and shared value creation (Elsbach & Sutton, 1992). These emergent properties, in turn, influence stakeholder relationships,

TABLE 2 Social network characteristics; elaborated form (Rowley, 1997).

Characteristic	Rationale
Density	It is the relative number of ties in the network that link actors together. It is a ratio, given by the number of relationships that exist in the network (stakeholder environment), on the total number of possible ties (if each network member were tied to every other member
Centrality	"Centrality" refers to an individual actor's position in the network relative to others
Degree centrality	The number of ties the node has with other actors in the network. The intuition behind degree centrality is that players "well connected"—in terms of having many relations—in their local environment will have access to many alternative sources of information, resources, and so forth
Closeness centrality	Actor's ability to access independently all other members of the network (Freeman, 1979). It is measured by summing the lengths of the shortest paths (geodesic) from him or her to all other actors (Wasserman & Faust, 1994). The most central actors have the shortest aggregate distances to all other actors
Betweeness centrality	Betweenness centrality measures the frequency with which an actor falls on the geodesic paths between pairs of other actors (Freeman, 1979). Betweenness centrality captures an actor's ability to control others

organizational practices, and CSR outcomes, creating feedback loops that shape the system dynamics.

Adopting the perspective of CSR as a complex system implies that even minor changes can have substantial, occasionally unforeseen, impacts on other system parts (Crilly & Sloan, 2012). For instance, proficient stakeholder engagement can trigger positive ripple effects, like augmented stakeholder support and enhanced organizational reputation, which further boost the organization's capability to involve stakeholders in CSR activities.

In summary, certain managerial literature perceives CSR as a complex system and underscores stakeholder engagement's pivotal role within this framework. Stakeholder engagement is instrumental in assisting organizations in navigating the intricacies of the CSR system, promoting emergent properties, and capitalizing on feedback loops to enhance CSR outcomes. By embracing a complex systems approach, organizations can gain a more profound understanding of the interdependencies and nonlinear relationships between CSR and stakeholder engagement, resulting in more efficacious and sustainable CSR practices. This alignment and understanding bring a level of fluidity and cohesiveness to CSR initiatives, allowing for better integration and synergy between the diverse elements of the system.

System Thinking is a powerful approach to study the interacting and systemic behavior of CSR and stakeholder engagement. Nonetheless, it has been slightly employed up to now. (Boulouta & Pitelis, 2014) conducted a systematic literature review to explore the application of systems thinking in CSR research. They identified several studies that employed System Thinking to examine the interactions and interdependencies between different components of CSR, such as stakeholders, processes, and outcomes. The review highlighted the potential of system thinking in enhancing our understanding of the complexity and systemic nature of CSR.

Lozano (2012) developed a framework for applying system thinking to CSR, which considers the interrelationships and feedback loops between different dimensions of CSR, including economic, environmental, and social aspects. The study highlighted the importance of system boundaries, interconnections, and systemic leverage points in managing and improving CSR performance.

Schaltegger and Wagner (2011) applied system dynamics modeling to study the complex dynamics of CSR and sustainable development. They developed a causal loop diagram to represent the relationships between different variables and feedback mechanisms in the CSR system. The study emphasized the need for systems thinking to address the systemic challenges and unintended consequences associated with CSR initiatives. Existent literature encourages the use of System Thinking in understanding CSR as a complex and interconnected system. By employing system thinking tools and frameworks, research can gain insights into the underlying dynamics, interdependencies, and feedback loops within the CSR system, leading to a more comprehensive understanding of CSR's impacts and implications.

According to Krick et al. (2005) we entered the third generation of stakeholder engagement, characterized by integrated strategic engagement for sustainable competitiveness.

Multistakeholder networks are networks of different types of stakeholders, where heterogeneity is intrinsic. Most of the networks includes at least three types: enterprise, society, state. In consequence, networks give life to a transversal collaboration on specific issues that concern all the members who are part of it. The issues addressed can refer to specific and local aspects, but also global ones.

Also, in a large-scale multistakeholder network, there may be more than one focal companies (Rowley, 1997).

According to Krick et al. (2005), we have entered the third generation of stakeholder engagement, distinguished by integrated strategic engagement for sustainable competitiveness. Multistakeholder networks are assemblies of diverse types of stakeholders, where heterogeneity is intrinsic. These networks often comprise at least three categories: enterprise, society, and state. As a result, networks engender transversal collaboration on specific issues of mutual concern. The issues tackled can pertain to local and specific aspects as well as global ones.

Additionally, in extensive multistakeholder networks, there may exist more than one focal company (Rowley, 1997). Network orchestration describes the act of executing a leadership role without the benefit of hierarchical authority (Dhanaraj & Parkhe, 2006). In essence, "orchestrating" entails directing the behavior of a network of actors without exercising effective control, but instead leveraging influences of different types, such as social media interactions (Troise & Camilleri, 2021), or those stemming from network membership. This characteristic reinforces the theoretical and practical value of this study. For our model, we consider a multistakeholder network centered on a single focal organization.

3 | RESEARCH PATH AND METHODS

We assume the CSR as a system made up of components and interactions; thus, everything else is outside the system's boundary and fall in the system's environment.

The system interacts with the environment by getting inputs and producing outputs (Poutanen et al., 2016; Sterman, 2000) (Figure 2).

We analyze CSR assuming *CSR performance gap* as proxy, in light of the SE dynamics. The system model allows to show, on its own, how stakeholder engagement in CSR is linked to the stakeholder network, allowing to study how the structure of SEN fosters CSR and vice versa. To identify all the system's element (components and parameters), and contextually define the system boundary, we leverage on Document Model building (DMB) (Haji Gholam Saryazdi et al., 2020). This methodology involves conducting a literature review to compile a dataset for constructing a system model. DMB represents a data-driven research approach, as outlined by Bleijenbergh et al. (2009), drawing on data sources that are documental, textual, and numerical in nature, such as journal articles.

Following the methodology protocol adopted by Haji Gholam Saryazdi et al. (2020) and refined by Linzalone et al. (2023) (Figure 3) the research process followed four steps:

1. Clarification and motivation of the question to investigate (RQ C&M);
2. Sampling, collection, and screening of the literature sources (SC&S);
3. Critical literature review of the sources, and extraction of the relevant *model data* (CLR);
4. Interpretation, composition, and presentation of the *results* in a suitable form (Zurynski, 2014).

3.1 | Clarification and motivation of the question to investigate

Despite the importance recognized to stakeholder engagement for CSR a lack of focus emerges when it comes to the analysis of their relation. The point is that SE influences CSR, and in turn CSR influences SE. This key feature of the relation requires a holistic and system analysis of CSR to shed light on the relation; further stakeholders are not standalone entities, rather they engage and interact with a focal company according to a network. The answer to this question would add valuable elements to the explanation and interpretation of dramatic disengagements of stakeholders, which lead to isolation and collapse of flourishing companies or, on

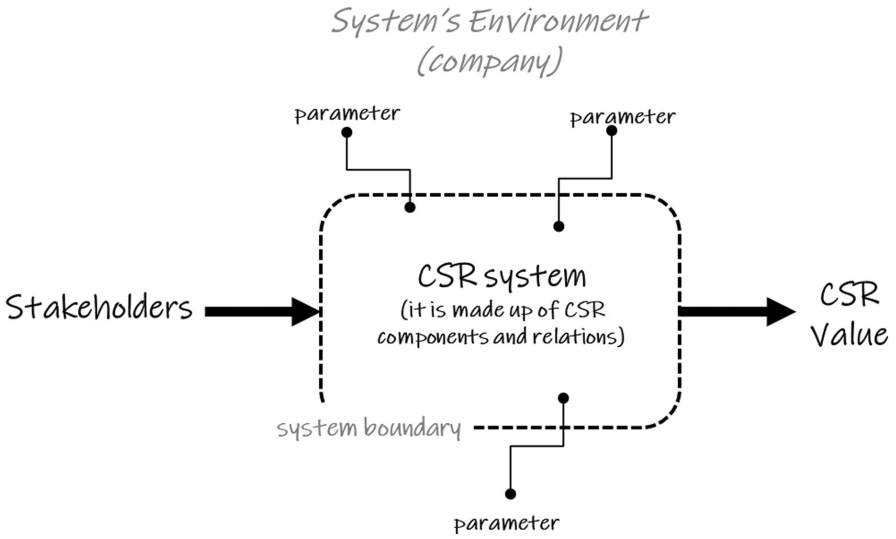
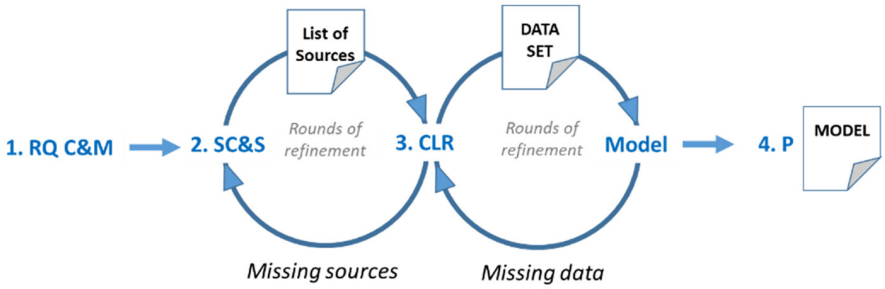


FIGURE 2 The 'CSR system' model elements.

FIGURE 3 DMB research process.



the contrary, to exemplar rises of companies' popularity and stakeholder support.

3.2 | Sampling, collection and screening of the literature sources

The authors gathered, examined, and structured a collection of relevant literature to develop an evidence-based model for the system being studied (Khan et al., 2003; Ryan, 2008). Following the approach of a Critical literature review as described by Torraco (2005) and Snyder (2019), the sources were evaluated for their pertinence, and their essential contents were succinctly summarized.

3.2.1 | Critical literature review

The literature review was conducted without a rigid protocol, embracing a 'creative' approach to data collection. This method was chosen to amalgamate insights from diverse sources, as described by Snyder (2019), with the aim of identifying the theoretical components that make up the CSR system. The system components defined the *model boundary*; a careful selection of *Stakeholder engagement network* variables was given.

3.2.2 | Collection, screening, and selection of literature sources. Creating the list of sample sources

Google Scholar search engine has been selected as the database where to search papers published on international journal or selected conference proceedings.

The search has been performed in January 2023. The aim was to collect the significant sources, to brought relevant theoretical components to the Corporate Social Responsibility system, however showing the SE components inside. Then, according to System Thinking modeling, the Causal Loop Diagram was employed to build the system model (Lane, 2008; Sterman, 2000). To this aim the search entries were: ("stakeholder") AND ("engagement") OR ("network") OR ("behavior") OR ("Corporate Social Responsibility"). *Journal* and *conference proceeding* articles only, were included (Table 3), since they comply with a blind and peer-review process.

3.3 | Critical review and extraction of the model data

The critical literature review was conducted to identify and extract the theoretical components of the model 'Corporate Social Responsibility'. Each source was reviewed and assessed against their significance to our study was reported on a review report; all the reports underwent a further review round that allowed to summarize and schematize the data according to a *model boundary diagram* (Haji Gholam Saryazdi et al., 2020; Sterman, 2000). This diagram brings together the *model components*, their theoretical foundation, and their description (Table 4). The *model boundary diagram* collect and describe the components to be included in the CLD model (Sterman, 2000).

3.4 | Data set and model

We employed the CLD as a modeling tool (Lane, 2000, 2008), that represents system's *components*, and the cause-effect relations existing between them. The first ones are displayed by texts, the second ones are displayed by arrows (Lane, 2000, 2008; Sterman, 2000).

The model system then captures the complex network of interactions among (human) system elements; they arise because of organizational and social hierarchies, interrelationships, rules and procedures, levels of authority and approval, process flows and pathways, incentives, compensation structures, goals and metrics, attitudes, responses, the stimuli and fears that provoke them, corporate culture, as well as feedback loops and delays inherent in system dynamics. They are the underlying forces that operate within a human-made system and make the system behave in a certain way (Maani & Cavana, 2007; Monat & Gannon, 2015; Senge, 1990).

From a graphical point of view, arrows are used to connect texts, with their direction indicating the flow from the cause to the effect relationships (incoming arrows for effects, outgoing arrows for causes). Each causal link between components, represented by

TABLE 3 Sampled sources for critical (or integrative) literature review.

Author	Title	Source (Journal/Conf. Proc.)
Maak (2007)	Responsible Leadership, Stakeholder Engagement, and the Emergence of Social Capital	*Journal of Business Ethics*
Bendell and Nesij Huvaj (2020)	Does Stakeholder Engagement through Corporate Social and Environmental Behaviors Affect Innovation?	*Journal of Business Research*
Vollero et al. (2016)	Avoiding the Greenwashing Trap: Between CSR Communication and Stakeholder Engagement	*International Journal of Innovation and Sustainable Development*
Rowley (1997)	Moving Beyond Dyadic Ties: A Network Theory of Stakeholder Influences	*Academy of Management Review*
Dobele et al. (2014)	An Examination of Corporate Social Responsibility Implementation and Stakeholder Engagement: A Case Study in the Australian Mining Industry	*Business Strategy and the Environment*
Bundy et al. (2018)	Organization–Stakeholder Fit: A Dynamic Theory of Cooperation, Compromise, and Conflict between an Organization and Its Stakeholders	*Strategic Management Journal*
Hollebeek et al. (2022)	Social Influence and Stakeholder Engagement Behavior Conformity, Compliance, and Reactance	*Psychology & Marketing*
Viglia et al. (2018)	The determinants of stakeholder engagement in digital platforms	*Journal of Business Research*
Kujala et al. (2022)	Stakeholder Engagement: Past, Present, and Future	*Business & Society*
Bendell and Nesij Huvaj (2020)	Does stakeholder engagement through corporate social and environmental behaviors affect innovation?	*Journal of Business Research*
Dobele et al. (2014)	An Examination of Corporate Social Responsibility Implementation and Stakeholder Engagement: A Case Study in the Australian Mining Industry	*Business Strategy and the Environment*
Winn (2001)	Building Stakeholder Theory with a Decision Modeling Methodology	*Business & Society*
Galaskiewicz and Wasserman (1989)	Mimetic Processes Within an Interorganizational Field: An Empirical Test	*Administrative Science Quarterly*
Helmig et al. (2016)	Under Positive Pressure: How Stakeholder Pressure Affects Corporate Social Responsibility Implementation	*Business & Society*
Ackermann and Eden (2011)	Strategic Management of Stakeholders: Theory and Practice	*Long Range Planning*
Wymer (2021)	Addressing Complex Social Problems with a Multi-Environmental Stakeholder Coalition	*International Review on Public and Nonprofit Marketing*
Aakhus and Bzdak (2015)	Stakeholder Engagement as Communication Design Practice	*Journal of Public Affairs*
Miles et al. (2006)	The Role of Strategic Conversations with Stakeholders in the Formation of Corporate Social Responsibility Strategy	*Journal of Business Ethics*
Derchi et al. (2021)	Corporate Social Responsibility Performance, Incentives, and Learning Effects	*Journal of Business Ethics*
Rhee et al. (2021)	The Effect of Local Stakeholder Pressures on Responsive and Strategic CSR Activities	*Business & Society*
Benlemlih and Bitar (2018)	Corporate Social Responsibility and Investment Efficiency	*Journal of Business Ethics*
Brammer et al. (2007)	The Contribution of Corporate Social Responsibility to Organizational Commitment	*The International Journal of Human Resource Management*
Aguinis and Glavas (2012))	What We Know and Don't Know About Corporate Social Responsibility: A Review and Research Agenda	*Journal of Management*
Bernardino (2021))	Responsible CSR Communications: Avoid "Washing" Your Corporate Social Responsibility (CSR) Reports and Messages	*Journal of Leadership, Accountability and Ethics*
Carroll and Shabana (2010)	The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice	*International Journal of Management Reviews*
Fassin and Buelens (2011)	The Hypocrisy-Sincerity Continuum in Corporate Communication and Decision Making: A Model of Corporate Social Responsibility and Business Ethics Practices	*Management Decision*
Orlitzky et al. (2003)	Corporate Social and Financial Performance: A Meta-Analysis	*Organization Studies*

an arrow, is labeled with a polarity, either positive (+) or negative (−), that shows how the effect variable changes in response to the cause. A positive link means that an increase in the 'cause' variable determines an increase in the 'effect', or a decrease in the 'cause' determines a decrease in the 'effect'. Conversely, a negative polarity is assigned when an increase in the cause determines a decrease in the effect variable, or a decrease in the cause variable leads to an increase in the effect (Sterman, 2000).

Following the graphical guidelines, a Causal Loop Diagram (CLD) is obtained, and the system's feedback loops are visualized. In fact, graphically, they are the closed chains of arrows that start and end at the same system component. The system's behavior over time is influenced by the structure of these feedback loops, that is their number, type, and interconnections (Cronin & Gonzalez, 2007; Maani & Cavana, 2007; Sterman, 1989).

4 | FINDINGS

4.1 | CSR system structure

By applying CLD model building guidelines (Sterman, 2000) to the data set, and supported by a modeling software, we came up to the Causal Loop Diagram model of the CSR system (Figure 4).

According to the literature review our model considers a multistakeholder network, with a single focal organization (i.e., the company).

The systemic structure (Monat & Gannon, 2017) is characterized by a certain number of feedback loops, however selecting 'Stakeholder engagement' as *workbench* variable of the study we are able to focus the analysis on the variable that links CSR and Stakeholder Network, as highlighted by the diagram (Figure 4).

Namely, five reinforcing loops and one balancing loop have been detected (Appendix). The CSR system has two outputs, the *Organization's economic value* and the *Social & Environmental Value*, while the CSR system input is the CSR performance target.

We first present them singularly, then we discuss systemic relations between CSR and SEN, by looking through the lenses of System Thinking (Senge, 1990), in order to explore and characterize such relation (Figure 5).

This reinforcing loop captures the dynamics of the stakeholders' network behavior over time; namely, it addresses how much the stakeholder network expresses a shared behavior in response to company's CSR. The degree of shared behavior is caused by the network structure, that preside over two key components of the system: internal *network communication efficiency* and *stakeholder coalitions*.

The degree of *behavior sharing* is linked to the stakeholder network structure (i.e. *density*) and *stakeholder homogeneity*. *Stakeholder network density* (S.N. density) and *stakeholder homogeneity* are the antecedents of *stakeholder shared beahvior*, thus representing the strategic levers to achieve the right degree of *shared behavior* among stakeholders (Figure 6).

This reinforcing loop, captures the basic and primary dynamic of stakeholder engagement, the *organization-stakeholder fit* (Bundy et al., 2018). According to it, as much as the company aligns its CSR objectives with stakeholders' objectives, the stakeholder engagement rises; also, as much as the stakeholders conform and adhere to company's objectives, the fit rises and then the engagement increases.

In this dynamic, the *Stakeholder cooperative behavior* plays a fundamental role, since it is the interconnection of 4 feedback loops, being influenced and influencing (R.2, B.1, R.3, R.4); it is, nonetheless, a *growth engine* (Sterman, 2000) for the *Stakeholder shared behavior (R.1)*. This feedback loops represent the strategic dynamics underpinning CSR and SE, as it is will see an exponential rise (decay) of SE in consequence of a rise (fall) of CSR strategic objectives, according to a the behavior of a reinforcing loop (Senge, 1990; Sterman, 2000). *Stakeholder knowledge* is the enabling factor, which allows to inform coherent strategies and investments to fit with stakeholders' objectives and expectations (Figure 7).

This balancing loop captures the dynamics of *CSR performance management*: it is based on the attainment and maintenance of CSR performance on targets (i.e., *CSR performance gap*), by the CSR managers, leveraging on stakeholder engagement. This last comes from company's reputation and stakeholder trust. This dynamic is enabled and supported by responsible CSR communication (Bernardino, 2021; Lim & Greenwood, 2017). In fact, it allows to feedback CSR performance to stakeholders, thus gaining further trust and engagement (Figure 8).

The reinforcing feedback loop R.3 is about the negative reinforcing trend that triggers and self-reinforces over time with the increase of *CSR managerial pressure*. As much as the stakeholders' pressure over the company's CSR rises, the tendence of CSR managers to '*washing*' (Bernardino, 2021) rises, thus making the stakeholder engagement falls, and finally widening the performance gap. The pressure the stakeholders exert on the company is linked to the *CSR's performance gap*, and is also influenced by the level of (legitimate) interests in the social and environmental impacts of the company's activities (Freeman, 1984), and by the influence power of the stakeholders (Frooman, 1999) (Figure 8).

This reinforcing feedback loop shows the reinforcing trend over time of the CSR performance gap, occurring with the rise of *CSR managerial pressure*.

A rise of *CSR performance gap* makes the *stakeholder pressure on the company* rises. It follows a rise of *CSR managerial pressure* which links to fall of *CSR management efficacy*. If CSR managers are able to duly react to pressures (e.g. by increasing the efforts and the budgets at their disposal) up to a certain level and time, stakeholders' pressure rises (over the managerial tolerance) makes the managers efficacy fall. In fact, they increase mistakes and wrong decisions, thus making the *CSR performance gap* rise (Figure 8).

This feedback loop is crucial for the interlink of CSR and Stakeholder Network. It interconnects the CSR dynamics mentioned up to now, with the overall behavior of the stakeholder network

TABLE 4 Model boundary diagram.

Model component	Theoretical foundation	Literature description
1. No of stakeholders	Rowley (1997)	It is the number of stakeholders/nodes in the network driven by the focal organization (the focal company); it explains the numerosity of the network
2. No of ties	Rowley (1997)	It is the number of ties (i.e., relations) existing between network's nodes
4. S.E. network density	Rowley (1997)	It is the relative number of ties in the network that link actors together. It is a ratio, given by the number of relationships that exist in the network (stakeholder environment), on the total number of possible ties (if each node was tied to any other node)
3. Stakeholder homogeneity	Winn (2001)	It is the degree of similarity, of stakeholder in the network. Heterogeneous groups of stakeholders (per type, size, form, industrial sector) have not shared interests; this is the case of a multistakeholder network, which is actually a network of different types of stakeholders. Whereas there is full homogeneity, it is assumed there are shared interests
10. Shared values	Oliver (1991)	It is the degree of agreement on the values driving the behavior of the network actors, and the priority the actors give them; namely this refers to social, environmental and economic values. Share values means more shared behaviors
11. Shared behavior	Galaskiewicz and Wasserman (1989)	It is the degree of uniformity of the behavior of the stakeholders in the network; the more the Network density, the more the behavior is shared and complied by the actors
5. Shared interests	Winn (2001)	Interests at stake are the very basic cause of stakeholders behavior; an increase in shared interests causes an increase in shared behavior; also, an increase in shared interests causes a fall in coalitions of stakeholders, which are in turn cohesive
6. Stakeholder saliency	Mitchell et al. (1997)	Average level of salience of the stakeholders in the network; this is set by the context in which the network lie, and is linked to pressure the stakeholder can exert on the F.O.
7. Stakeholders' social responsibility	Authors'	The level of social, economic, and environmental responsibility the stakeholders have; the rise of the social responsibility causes a rise of the pressure they exert on the F.O.
8. Stakeholder pressure on the F.O.	Helmig et al. (2016)	Pressure the stakeholders exert on F.O. to pursue and achieve CSR performance and goals
9. Coalitions of stakeholders	Wymer (2021)	Subgroup of stakeholders, which share a common interest, concern, expectation with regard to the F.O.; the rise of the no of coalitions causes a rise of stakeholder conflicts
12. F.O. centrality	Rowley (1997)	Centrality of the F.O.; the rise of F.O centrality causes a rise of Organization communication efficiency (with the stakeholders), and also of the influence on stakeholders
13. Network communication efficiency	Aakhus and Bzdak (2015)	It is the overall efficiency of the F.O. in communicating, sharing information, and keeping update the stakeholders
14. Stakeholder engagement	Bendell and Nesij Huvaj (2020), Erkul et al. (2020)	The effect of the F.O.'s activities aimed to collect and analyze stakeholders' concerns, expectations, interests, with regard to the FO's business
15. Stakeholder conflicts	Mitchell et al. (1997)	Stakeholder conflicts arise when the interests, values, or expectations of different stakeholders diverge, creating challenges for organizational decision-making and strategy implementation. Addressing these conflicts requires careful negotiation, balancing of interests, and often, innovative solutions that aim for mutual benefits

TABLE 4 (Continued)

Model component	Theoretical foundation	Literature description
16. Company influence on stakeholders	Mitchell et al. (1997), Frooman (1999)	Firm's ability to shape stakeholders' perceptions, expectations, and behaviors through its actions and communications. This influence is pivotal in building trust, loyalty, and support, which are crucial for achieving strategic objectives and sustaining competitive advantage. Companies leverage various strategies to exert this influence, aligning stakeholder interests with corporate goals
17. Stakeholder cooperative behavior	Hollebeek et al. (2022), Jones (1995)	Actions and attitudes of stakeholders that are oriented toward collaboration and mutual benefit with the organization. Such behavior fosters a positive, synergistic relationship between the company and its stakeholders, leading to enhanced trust, loyalty, and shared value creation. Cooperative behavior is crucial for long-term sustainability and success (Jones, 1995). Stakeholders' level of cooperation with the F.O., shown by its supportive or contrasting behavior
18. Customer base	Authors'	It is the F.O.'s base of customers who secure incomes; keeping adequate levels of customers the organization is sustainable
19. Brand image	Popoli (2011)	It is the responsibility on social, environmental and economic issues that a company is credited, or perceived, by the stakeholders
20. Stakeholder trust	Bundy et al. (2018)	Level of stakeholders' trust in the focal organization
21. CSR strategic alignment	Ackermann and Eden (2011), Freeman (1984), Porter and Kramer (2011)	"Strategic alignment" or "stakeholder integration," is crucial for achieving sustainable competitive advantage, enhancing corporate reputation, and ensuring long-term organizational success. CSR strategic fit is then the degree of respondence, matching, or on the contrary offset, of CSR strategy to stakeholders' objectives and expectations. Much of this alignment depends by the knowledge base about the stakeholders, and the strategy
22. Stakeholder knowledge base	Miles et al. (2006)	The quality of the stakeholder knowledge base, regarding concerns, expectations, interests, is the base to inform strategies of CSR
23 CSR management effectiveness	Porter and Kramer (2006), McWilliams and Siegel (2001)	CSR management effectiveness is the extent to which CSR initiatives achieve intended social, environmental, and economic outcomes, aligning with both business objectives and stakeholder expectations. Effective CSR management is characterized by strategic integration of CSR into core business operations, stakeholder engagement, transparency, and accountability
24. CSR performance target	Derchi et al. (2021), Orlitzky et al. (2011)	Specific, measurable goals set by a company organization to assess the effectiveness and impact of its CSR initiatives. These targets are integral for tracking progress in areas like environmental sustainability, social equity, and economic development, guiding strategic CSR integration and decision-making
25. CSR managerial pressure	Helmig et al. (2016), Rhee et al. (2021), Aguinis and Glavas (2012)	Pressure exerted by stakeholders on the managers of the company to their concerns and requirements. Internal and external pressures faced by managers to implement and enhance CSR initiatives within their organizations. This pressure stems from stakeholders' expectations, regulatory requirements, competitive advantage, and the moral obligation to contribute positively to society
26. CSR performance gap	Graafland and Van de Ven (2006)	Discrepancy between an organization's stated CSR commitments and the actual outcomes or impacts of its CSR initiatives. This gap highlights issues in implementation, effectiveness, or transparency, potentially undermining stakeholder trust and corporate reputation. Addressing this gap requires strategic alignment, stakeholder engagement, and enhanced accountability
27. Social & environmental value	Porter and Kramer (2006), Carroll and Shabana (2010)	Tangible and intangible benefits derived from implementing corporate social responsibility initiatives. They include enhanced brand reputation, increased customer loyalty, improved employee satisfaction, and potential cost savings from sustainable practices. CSR value contributes to a company's competitive advantage by aligning business operations with societal expectations and ethical standards

(Continues)

TABLE 4 (Continued)

Model component	Theoretical foundation	Literature description
28. CSR investment performance	Benlemlih and Bitar (2018), Orlitzky et al. (2003)	Allocation of resources by a company toward CSR initiatives with the expectation of achieving specific social, environmental, and economic outcomes. The performance of these investments are strategic, and aimed at enhancing the firm's reputation, stakeholder relationships, and long-term profitability while contributing to societal well-being and sustainability
29. Organizational commitment to CSR	Brammer et al. (2007), Aguinis and Glavas (2012)	Company's dedication to integrating social and environmental concerns into its business operations and interactions with stakeholders. This commitment is characterized by strategic CSR initiatives that are aligned with the company's core values and objectives, demonstrating a long-term investment in societal well-being and sustainability
30. Organization-stakeholder fit (O.-S. fit)	Bundy et al. (2018), Mitchell et al. (1997)	Alignment between an organization's strategies, values, and practices with the expectations and needs of its stakeholders. Achieving this fit enhances organizational legitimacy, stakeholder satisfaction, and can lead to superior organizational performance by fostering trust, cooperation, and mutual value creation
31. Organizational reputation	Fombrun and Van Riel (2004)	Collective perceptions of a firm's stakeholders regarding its ability to meet their expectations over time. A strong reputation is a valuable intangible asset that can enhance competitive advantage, attract investment, and increase customer loyalty. It is built through consistent performance, reliability, and ethical conduct
33. CSR strategic objectives	Porter and Kramer (2006)	CSR strategic objectives are a set of core, long-term objectives, informed by rooted beliefs held by an organization. They act as guiding principles that provide an organization with purpose and direction and set the tone for its interactions with its customers, employees and other stakeholders
34. Economic value	Authors'	The value that stakeholders place on an economic good based on the benefit that they derive from the good. It is, usually, estimated based on the person's willingness to pay for the good, typically measured in units of currency
35. Responsible CSR communication	Lim and Greenwood (2017), Bernardino (2021)	Communication is a pivotal factor in achieving CSR goals. Stakeholder engagement in communication, through CSR firm's reports, increases CSR goals achievement, and talented employees retention
36. CSR reporting	Authors'	It is the efficacy of CSR reporting, both respect to internal and external stakeholders, in enabling the evaluation of ethical, environmental, philanthropic and economic impact of an organization
37. Organizational exploitation capability	Authors'	It is the system of capabilities to ensure the organization its position in the industry and its ongoing profitability and survival
38. 'Washing'	Bazillier and Vauday (2009), Bernardino (2021)	Facade ecologism or facade environmentalism is a communication strategy of certain companies aimed at building a deceptively positive self-image in terms of the environmental or social impact, in order to divert public opinion's attention from the negative effects on the environment due to one's own activities or products, or just from a fundamental indifference
39 Managerial pressure tolerance	Gonzàlez-Benito and Gonzàlez-Benito (2006)	It is the tolerance of CSR managers to stakeholders' pressures; if it low, then more likely pressure levels exceed managers' optimal threshold, thus they negatively react and impact on performance, mostly by hijacking their focus and attention away from the regular task

relevant for its engagement: *stakeholder shared behavior*. This reinforcing loop R.5 overlaps and nests with R.2.

Indeed, the rise or fall of the *stakeholder shared behavior*, that depends by the stakeholder network structure, lets the R.2 'Company-Stakeholder fit' reinforce, with both possible trends: stakeholder engagement increases or decreases over time.

5 | ANALYSIS AND DISCUSSION

According to Systems Thinking (Senge, 1990; Sterman, 2000) a system's behavior is determined by its underlying structures, the so-called 'systemic structures' (Monat & Gannon, 2015). Systemic structure is the hidden set of elements and interactions (e.g.,

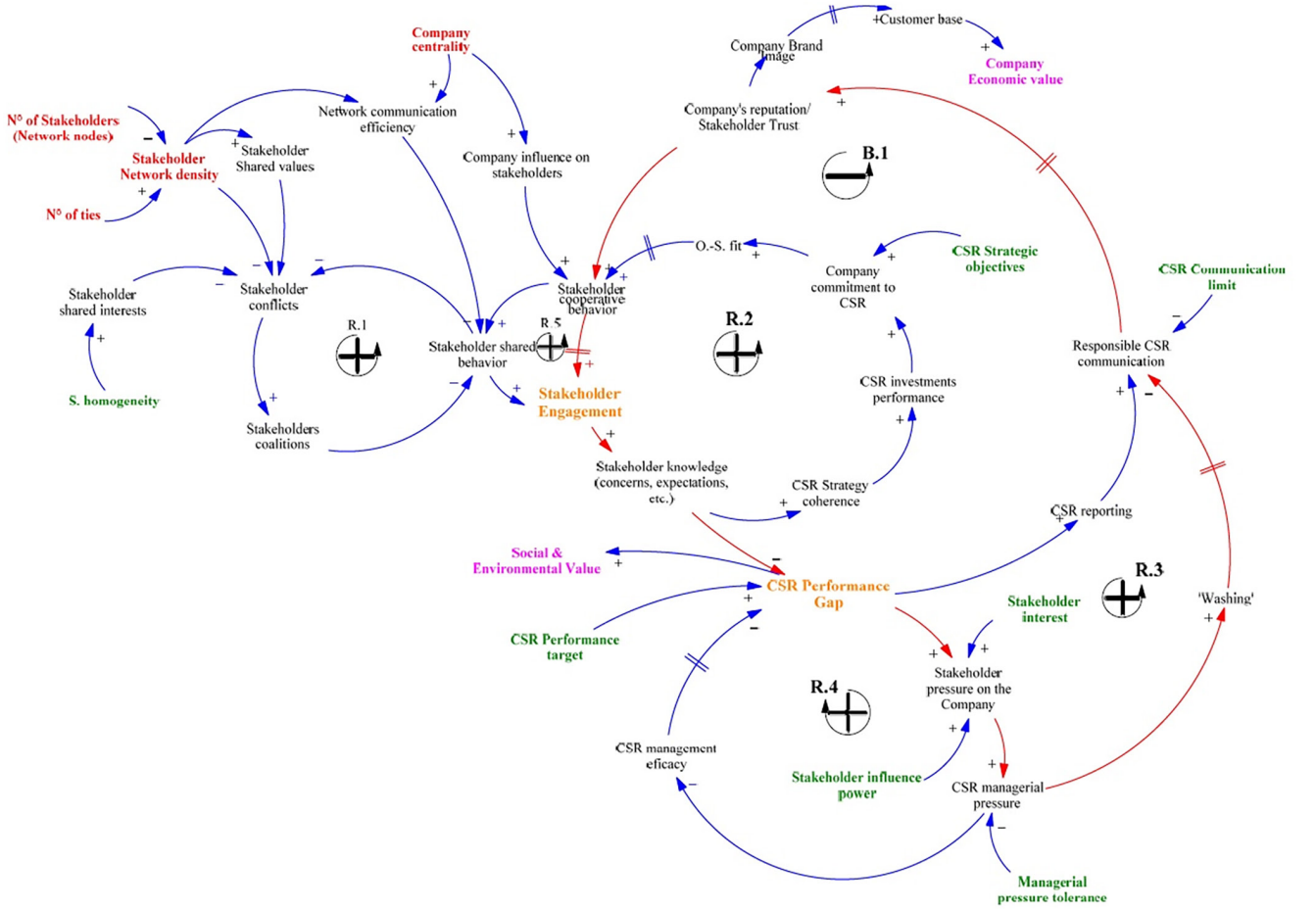


FIGURE 4 CLD of the CSR system.

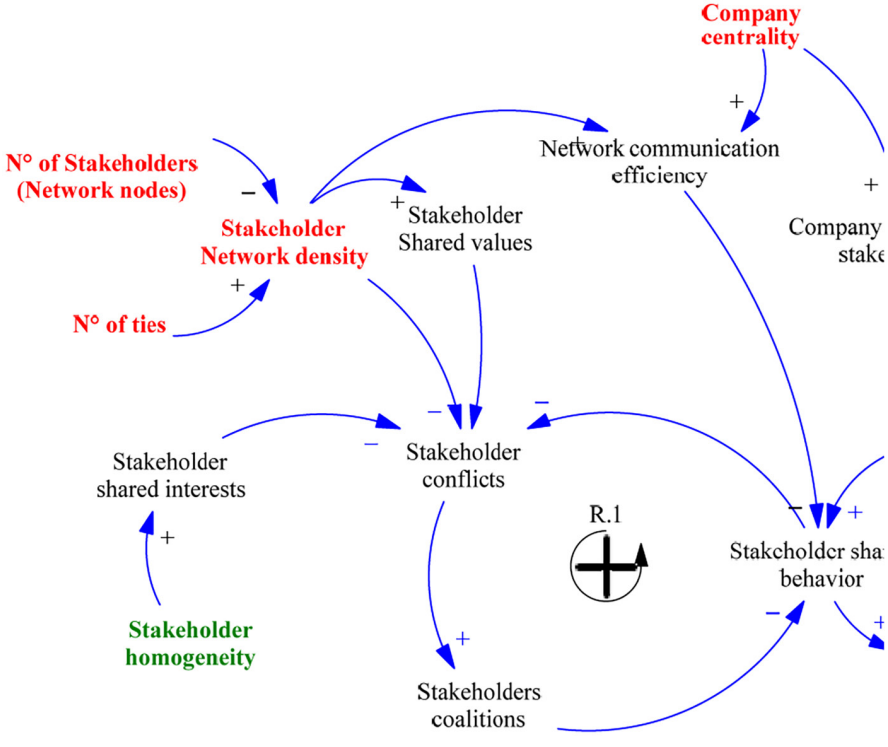


FIGURE 5 Reinforcing feedback loop R.1—"Shared behavior of stakeholders".

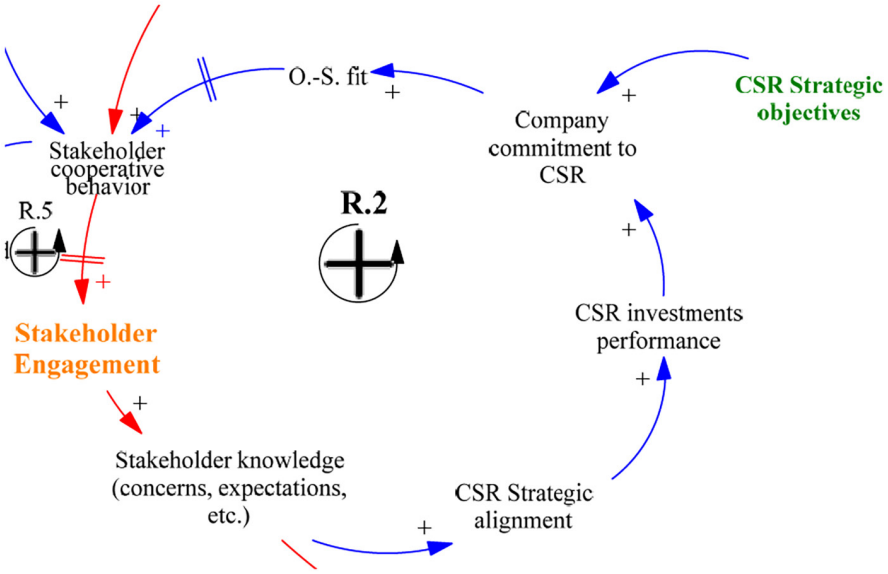


FIGURE 6 Reinforcing feedback loop R.2—"Organization-Stakeholder fit".

organizational, social, emotional, technological, cultural, economic, information), individual and organizational, that exist and act as underlying forces in human systems.

CSR's system model, created by CLD, shows the complex relation between CSR and SEN, regulated by several feedbacks that require a holistic and systemic analysis for a meaningful exploration. Six interconnected and/or nested feedback loops concurrently model the relation between CSR and SEN.

5.1 | The causal structure of CSR-SEN relation

Before analyzing the dynamics of the relation CSR-SEN, through a functional analysis based on System Thinking's *archetypes*, it is useful to focus the causal structure subtending the behavior of Stakeholder Engagement. By selecting 'stakeholder engagement' as *workbench variable* of the model system, it is possible to visualize the *causes tree in* Figure 9.

On the basis of this diagram, it is possible to argue that Stakeholder Engagement is the effect of two properties of the stakeholders: the cooperative behavior and the shared behavior. The first is about the interaction stakeholder-company and is caused by the CSR strategy and management. The second instead, is about the interaction between stakeholders, and is crafted by the stakeholder network properties.

It is to note that *company centrality* and *stakeholder network density* (i.e., they configure the stakeholder network structure) is linked to the stakeholders' *shared behavior*. This highlights the path by which the stakeholder network relates with Stakeholder Engagement. Through the careful management of stakeholder networks structure, companies can foster the engagement by influencing the mediating variable: stakeholder cooperative beahvior.

So, Stakeholder engagement is influenced by two sub-systems: stakeholder shared behavior, and stakeholder cooperative behavior. The first is an effect of the stakeholder engagement network, the second is an effect of the company's CSR system.

Of course, being the company a node of the network itself, it can actively manage stakeholder network actions and CSR system settings in order to drive the CSR strategically over time, with the right SEN actions. Namely, the complex system view enables to read the levers and the dynamics that bridge the CSR performance gap.

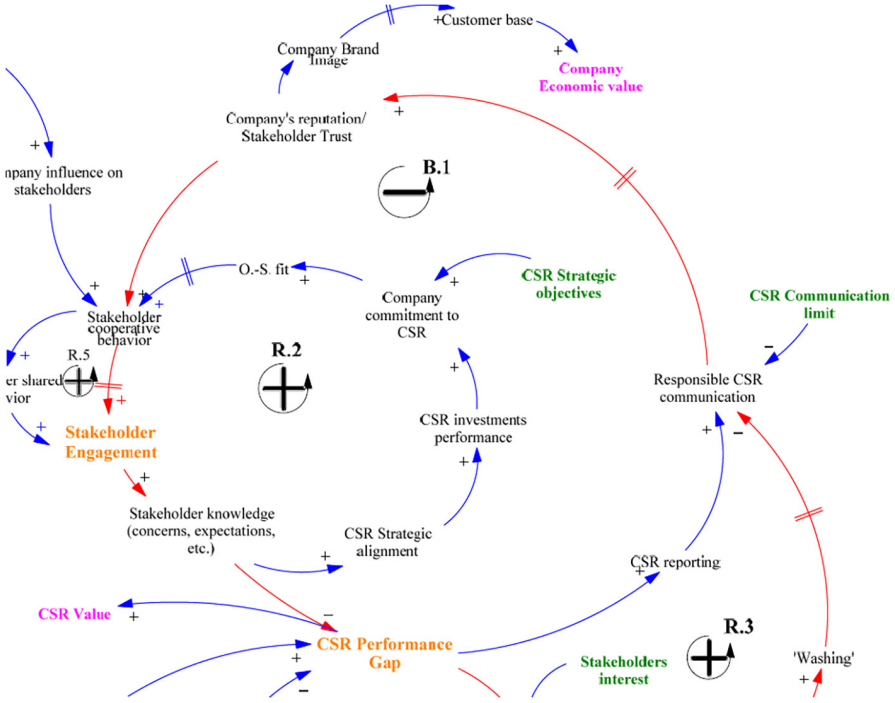
5.2 | The dynamics underlying the relation CSR-SEN

The six feedback loops we detected are:

- R.1—Shared behavior of stakeholders
- R.2—"Organization-Stakeholder fit"
- B.1—CSR Performance attainment
- R.3—The 'washing' trap
- R.4—CSR managers' burnout
- R.5—Company's influence on Stakeholders' behavior

The 'workbench' variable "stakeholder engagement" connects 6 feedback loops (see Appendix); this means its dynamic over time is governed by the system dynamics. Further, one feedback loop (R.1) along with other stakeholder networks variables, flows into Stakeholder engagement, thus highlighting the stakeholder engagement as a mediating element between the stakeholder Network structure (stakeholder network density, company centrality) and the Stakeholder Network features (i.e. Stakeholder homogeneity, stakeholder interest).

System Thinking provides conceptual elements that allow to study the CSR over time in relation to the stakeholder engagement. Namely, tracing back the feedback loops to *system archetypes*



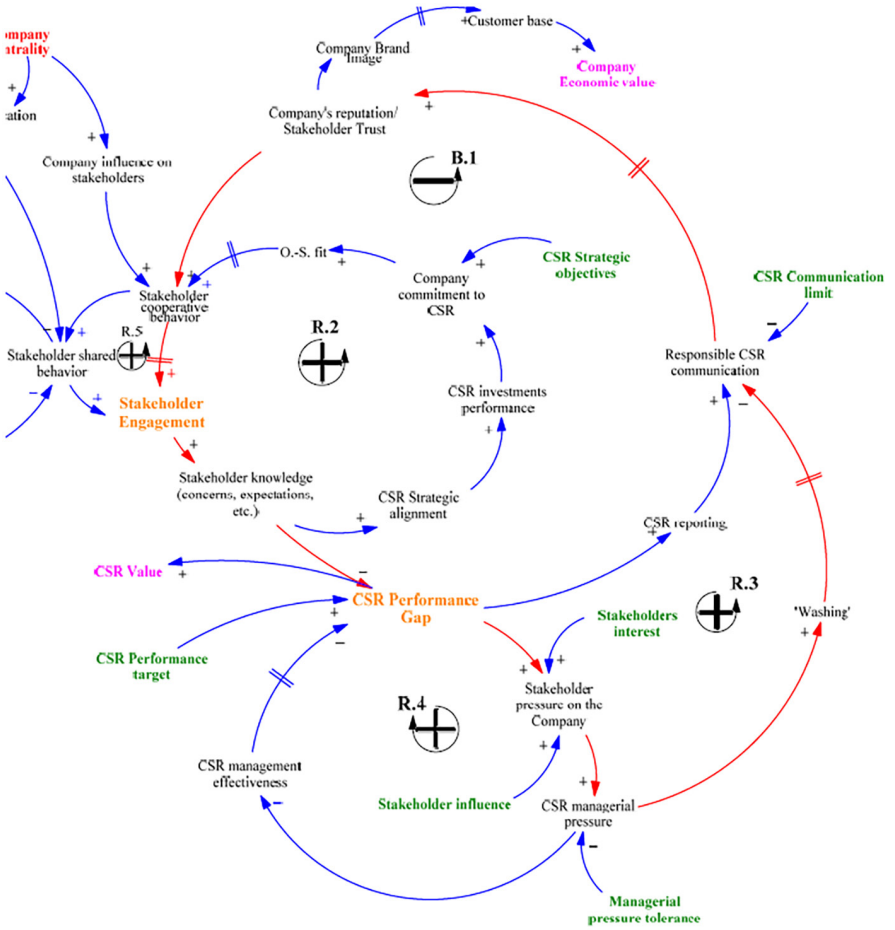


FIGURE 7 Balancing loop B.1—"CSR Performance attainment".

FIGURE 8 Reinforcing feedback loop R.3—The 'washing' trap'; R.4 'CSR managers' burnout'; R.5 'Company's influence on Stakeholders' behavior.

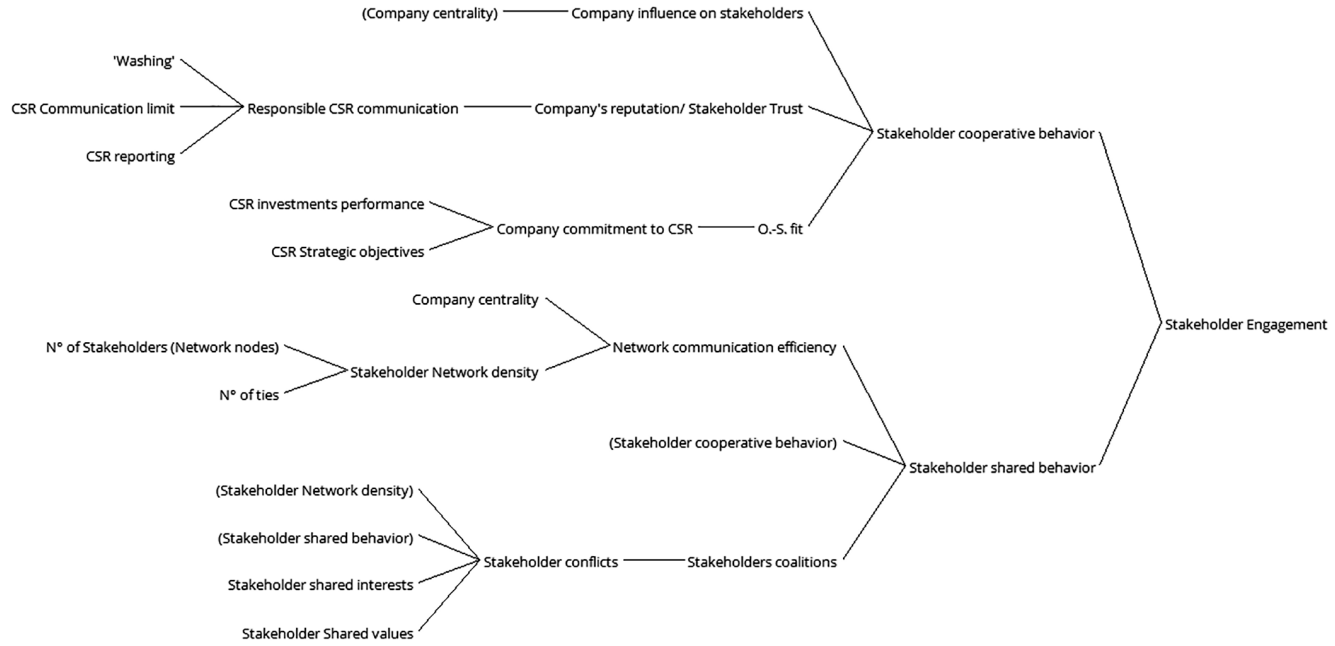


FIGURE 9 Causal structure of the CSR-stakeholder engagement relation.

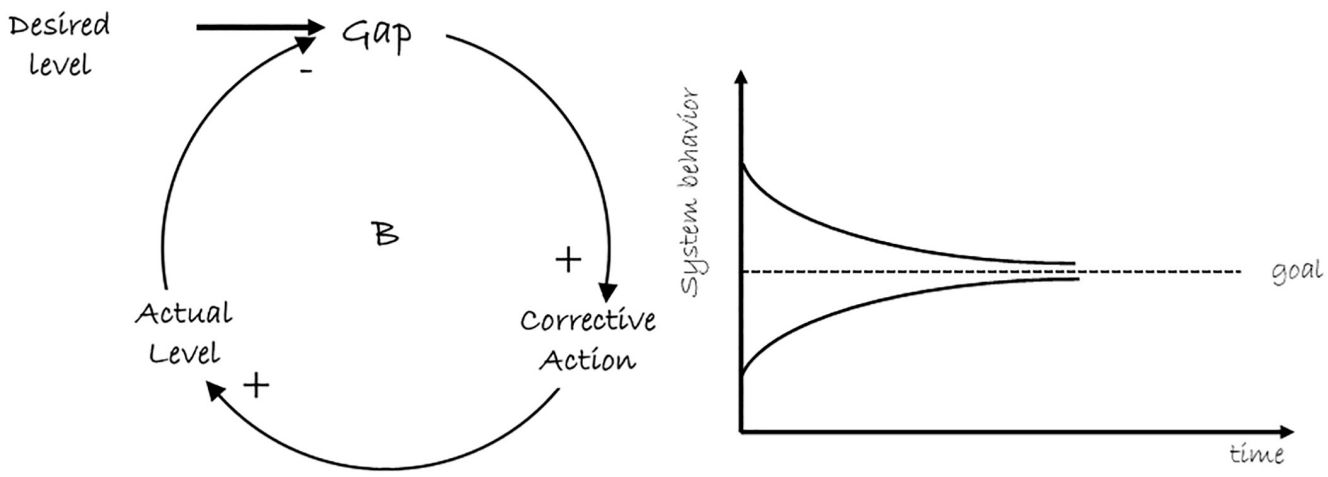


FIGURE 10 Balancing feedback loop B.1 (in red)—Stakeholder pressure and managerial tolerance.

(Senge, 1990) and analyzing them according to their properties and trends, we dissect 4 stages.

5.2.1 | The balancing loop B.1

Its system archetype is the *balancing feedback loop* (Figure 10): a rise of the engagement causes a rise of CSR performance until the performance gap is fulfilled and the performance attained.

The corrective actions to let stakeholder engagement rise, can come from the regulation of the loop R.2, by rising the *O-S fit*.

The desired level of performance is set by the CSR performance target. This basic dynamic underpinning SE and CSR is nested with R.2 and interconnected with R.4. In case of fall of *stakeholder shared behavior*, the stakeholder engagement falls thus triggering a dampen in the "Stakeholder engagement" loop.

5.2.2 | Interaction of B.1 and R.2

The B.1 and R.2 makes together two nested loops according to the system archetype "Solutions that fail" (Senge, 1990). *O-S fit* is the key cause for stakeholder engagement: the most the company's objectives fit with stakeholders' ones, the most the stakeholders engage in CSR. However, in the long run, the persistence of CSR managers of turning the company's objectives to match with stakeholders'

objectives would come to a *burnout* of the system, undermining the business performance (Figure 11).

Then the initial reinforcement of CSR performance, whose growth engine is *O-S fit*, is followed by a decay; the balance between company's and stakeholders' interests can be pursued by regulating O.-S- fit, thus controlling the level of performance.

5.2.3 | The influence of R.1 and R.5 on stakeholder engagement

On the other side, R.1 and R.5 interact with the previous archetype. If the company has high *centrality* and the stakeholder network has high *density*, the company can influence stakeholders toward a cooperative and shared behavior. If the company's centrality falls, and the network density falls too, then B.1 will last its effect (Figure 12). By shaping stakeholder engagement network (i.e., density, company/organization centrality) companies can foster stakeholder engagement dynamics. Regulation and management of the stakeholder network should be done in due advance by the organization, to avoid system instability.

5.2.4 | The pressure for CSR performance attainment, and the reinforcing loop R.3 and R.4

If the stakeholders' *interests* and *influence* rise, hand in hand the pressure on CSR managers rises, up to the managerial tolerance and over; the rise of managerial pressure on CSR managers, makes R.3 and R.4 trigger, with the following rise of CSR performance gap. Actually, the pressure on CSR managers induces to mistake, or even to *greenwashing*. This reinforcing and declining trend of the 'stakeholder engagement' drops stakeholder trust, cooperation, and engagement, bringing stakeholder engagement to a decline (Figure 12). A careful balance of the system, to achieve with dynamic regulations of the stakeholders' network, would allow instead to prevent and control such managerial burnouts, allowing to save a high level of stakeholder engagement and avoid any drop.

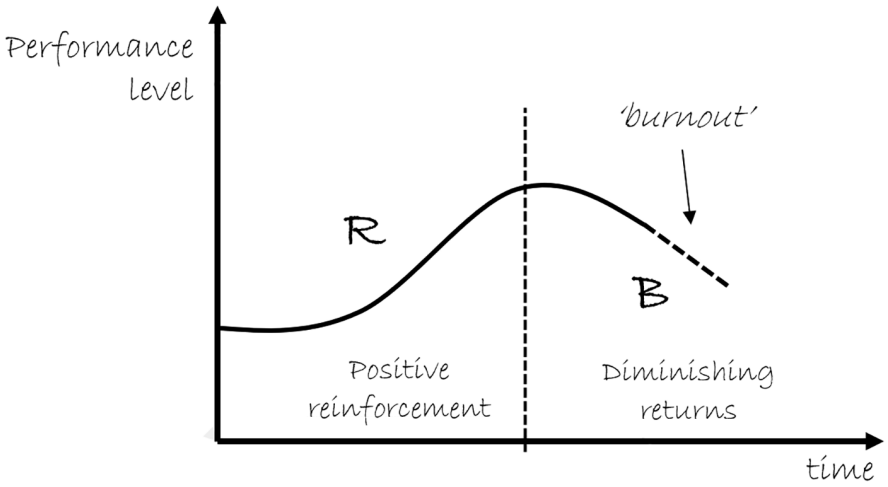


FIGURE 11 Balancing loop: structure and behavior.

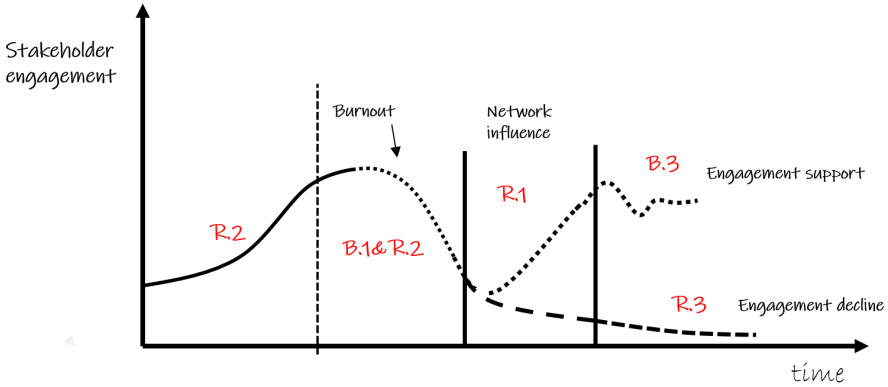


FIGURE 12 The dynamics of Stakeholder engagement.

B.1 and R.3 configure as well as a '*solution that fail*' archetype. 'Washing', that is all the practices of unsubstantiated or misleading claim about the environmental or social benefits produced by a company (e.g., green washing, vegan washing, etc.) (Bazillier & Vauday, 2009), are short-term resolution of the system's ineffective behavior, that are instead at the expenses of the long-term company's reputation, trust, and then finally affect the CSR performance.

It is relevant for companies to detect detrimental reinforcing dynamics, like greenwashing, and prevent them by increasing *responsible leadership* of the CSR managers (Maak, 2007). CSR managers burnout, deriving from stakeholders pressure, is another detrimental dynamic with counterintuitive effects on the CSR system performance (i.e. the higher the stakeholder pressure does not bring to a higher performance attainment).

5.3 | Managerial implications and limitations of the study

The managerial insights that emerge from the study suggests that in periods of growth it is necessary to analyze what can be current and future limiting conditions and to intervene by removing the limit to growth before it manifests its negative effects. The relevance of communication has been largely agreed by CSR literature. However, the not linear relation with CSR performance, and the delay of its effects have been lightly addressed.

Being governed by a *Balancing loop*, CSR communication exceeding a *communication level/load*, the company does not portrait as truly and authentic (Bernardino, 2021) thus undermining sincerity in the eyes of stakeholders (Fassin & Buelens, 2011). A saturation effect takes place in the system (e.g. the CSR communication is perceived by stakeholders as self-advertising or as a marketing strategy, rather than a responsible reporting). Thus, *CSR communication* should not exceed a goal level (Haji Gholam Saryazdi et al., 2020; Monat & Gannon, 2015; Senge, 1990) that keeps the performance stable, avoiding the decay dynamics of this loop. All in all, the management of *CSR communication* is not straightforward since saturation effects in the CSR system may invert the dynamics of the engagement of stakeholders.

The identification of the basic and primary dynamic of stakeholder engagement, identified with the Organization-stakeholder fit feedback loop (R.2) highlights that companies can both manage to bridge the gap with stakeholders' objectives and expectations, by informing the CSR strategy with rich and genuine stakeholder knowledge, and by operating in the network as a focal node. Hence, companies should increase centrality in the network, and implement a set of soft actions aimed to increase stakeholder homogeneity, influence stakeholder objectives (e.g. by informing, communicating, and explaining company's views, visions, values).

The twofold position of the company, despite critical since central in a complex system of interactions, can advantage of systemic actions that would support the CSR performance with the leverage of the stakeholders engagement.

Still here the company would balance CSR Strategy alignment with stakeholders, and network strategic actions to smoothly drive a strategic evolution of the network. This strategic evolution can be driven by acting on: N° of stakeholders, N° of ties between stakeholders, homogeneity of stakeholders, centrality in the network.

The stakeholder shared behavior is a primary element of engagement. Companies must monitor and foster specific properties and values of the network, that we can address as: *company's centrality* and *stakeholder network density*.

Finally, from our study, it comes out that downgrading company's business objectives in favor of social objectives to gain higher stakeholder engagement is useless if the stakeholder network is not properly structured (i.e., is such to determine high level of conflicts: low density, low homogeneity, low company's centrality). Companies have to ponder their effort in CSR according to the structure of the network; on the contrary, companies can invest in shaping the stakeholder network (i.e., fostering density, homogeneity, number of actors) to support shared and cooperative beahvior.

About limitations of this study, it has a restricted number of literature sources (documents) used to model the phenomenon. Actually, it does not cover all the literature, since the sampling has been theoretical and not statistical; this implies that the collection of documents (scientific paper) was stopped according to the researchers' judgment of theoretical saturation. Nonetheless, the model is useful for explorative purpose.

6 | CONCLUSIONS

This paper addresses the relation between CSR and Stakeholder Engagement, in light of the complex relations underpinning the CSR system, and assuming the stakeholder of a focal company as related according to a network (i.e., stakeholder engagement network). Indeed, most of the existing literature implicitly adopts a dyadic approach to study stakeholder engagement and CSR. In other words, existing studies analyze the relations of a focal firm with its stakeholders without considering the role of concomitant relations of the stakeholders with each other. Stakeholders' engagement, however, requires to consider the overall network of relationships and the side influences.

This study departed from a critical review of the literature, to collect theoretically. Then a Causal Loop Diagram model of CSR allowed to highlight the complex relations with the stakeholder engagement network. The analysis of the system structure according to the System Thinking tools (e.g., the system archetypes) provided ground to outline strategic and managerial understanding of the addressed relation CSR-SE. The paper contributes to the literature on Stakeholder Engagement and on Corporate Social Responsibility by providing a holistic model able to account for interaction phenomena and thus overcoming the limits of traditional reductionist approaches.

Assuming a multistakeholder network with a focal organization (i.e. the company) the SEN is consistently linked to the CSR; this link is not linear since the relation appears to be governed by a set of 6 feedback loops, representing as much dynamics. These dynamics, despite mostly recognized by previous literature, have never been considered together and in interaction. This paper than advances the study on CSR and stakeholder engagement by enlarging the picture, and providing a systemic framework.

Our findings can be of guidance for managers and policymakers interested in the engagement of complex networks of stakeholders as well as in promoting Corporate Social Responsibility.

Stakeholder-engagement management is crucial for corporate's value creation requiring a switch from linear models to complex ones (Ki et al., 2020; Mishra et al., 2019); they have to be able to consider the complex and system nature of stakeholder network in CSR driven organizations. To move from an 'engagement of stakeholders' approach to an 'engagement with the stakeholders' as a more effective way to design new value creation processes (Civera et al., 2019; Devin & Lane, 2014), this paper offers valuable insights to further explore SEN and CSR as a complex 'whole'.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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