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REVIEW ARTICLE

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Analysis of the relationship between firm innovation and corporate social responsibility: A systematic literature review

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Abstract

Firm innovation and corporate social responsibility (CSR) are key strategic considerations that shape a firm's competitiveness and sustainability. However, studies exploring the relationship between the two are heterogeneous and sometimes obtain contradictory results, making it difficult to draw clear conclusions. This systematic literature review addresses this gap by examining 72 peer-reviewed studies spanning 2000–2024 to assess the type of relationship (direct, indirect, other), direction (causality), sign (positive/negative), and statistical significance of the innovation-CSR relationship. The results generally support a positive relationship – especially from CSR to firm innovation- although the outcomes vary depending on measurement approach, sector, geographical context, and period. Beyond direct effects, we identify more complex dynamics, notably mediation/moderation processes, which can involve both firm innovation and CSR. Academically, this study clarifies theoretical trends, highlights underexplored frameworks, and contributes methodologically by applying the Scientific Procedures and Rationales for Systematic Literature Review protocol and the theories-contexts-methods framework, which could enrich future research. For managers, we offer guidance with regard to leveraging CSR to foster innovation and in turn improve firm performance. For policymakers, our findings can inform designing frameworks to stimulate sustainable business practices. Finally, for society at large, this study can contribute to aligning corporate behavior with social and environmental objectives.

KEYWORDS
conditioning factors, corporate social responsibility, innovation, systematic literature review

INTRODUCTION

Innovation is key to social and economic growth (Gangopadhyay & Homroy, 2023). The Organisation for Economic Cooperation and Development (OECD) defines innovation as the process through which organizations implement new ideas or concepts, produce improved products or services, introduce changes in production methods, or create new methods of organizational management to improve efficiency, competitiveness, and economic performance (OECD, 2005). This definition highlights the various ways in which innovation can be expressed, whether through incremental improvements to existing products and services or entirely new approaches. It can include changes in every aspect of the business model, such as organization and management, contributing to the improvement and transformation of economic entities (Mohammed-Ali et al., 2021). Thus, innovation research has focused on the challenges facing society, companies, and public institutions in providing solutions to problems such as sustainability (Kennedy et al., 2017), the environment (Przychodzen et al., 2020), and digital transformation (Nathan & Rosso, 2015)

Today, because of society's increasing expectation that businesses should help address global sustainability challenges such as environmental change, social equity, and economic freedom, corporate social responsibility (CSR) has also attracted increased attention in academic

and business contexts. CSR can be defined as "*a concept whereby companies integrate social and environmental concerns in their business operations and in their interactions with their stakeholders on a voluntary basis. A socially responsible company considers the impact of its decisions and activities on society and the environment and behaves ethically and transparently, thereby contributing to sustainable development and the health and wellbeing of society*" (European Commission, 2001, pp. 7–8). This definition, widely used in the literature, establishes that companies should accept responsibility for their actions and consider their effects on society and the environment. It also underscores the importance of ethics and transparency, as well as the contribution of sustainable development to citizens' health and well-being. CSR can provide a framework of collaboration among governments, businesses, and civil society to achieve sustainability objectives (Atif et al., 2024). Such considerations have rapidly risen on the corporate agenda and are of increasing importance to firms worldwide (Aresu et al., 2023). CSR practices also serve as criteria for investors when assessing potential long-term investments (Thosuwanchot & Lee, 2025). Moreover, consumers are becoming increasingly aware of fair supply chains and commercial practices, often basing their purchasing decisions on firms' CSR (Kuokkanen & Sun, 2020).

Strategically, firm innovation and CSR are important firm-level issues that can affect other firms' decisions and performance (for reviews, see, for example, Nathan & Rosso, 2022; Coelho et al., 2023). Recent studies indicate that sustainability and firm innovation go hand in hand and are linked to strategy, suggesting that future studies should focus on the strategy and innovation domains in corporate sustainability (Jadhav & Sarangi, 2024). Regarding the determinants of firms' innovative efforts, the literature has focused on the roles of strategic management (Nieto et al., 2022), collaboration and knowledge exchange (Zahoor et al., 2023), culture (Aboramadan et al., 2020), innovation process management (O'Reilly & Tushman, 2013), formal and informal institutional contexts (Sharma et al., 2022), and firm characteristics (Protogerou et al., 2017). Similarly, as a key element of achieving competitive advantage, most studies have investigated CSR determinants. Previous literature has demonstrated that companies' socially responsible behaviors (or their disclosure of such actions) can depend on the availability of financial resources (Preston & O'Bannon, 1997), company size (McWilliams & Siegel, 2000), firms' risk (Jo & Harjoto, 2011), and their industry (Erden & Bodur, 2010). A firm's involvement in CSR activities can also vary according to ownership concentration (Godos Díez et al., 2012), the identity of large owners (Mariani et al., 2023), or firms' corporate governance bodies (for reviews, see Endrikat et al., 2021). Studies have also focused on the effects of some country-level variables regarding firms' environmental practices or the transparency of such actions (Boura et al., 2020).

Therefore, considering CSR's relevance in the current sustainable context and due to its voluntary nature, exploring its determinants is still timely and necessary. Measuring firms' innovation has long been a challenge (Rammer & Es-Sadki, 2023), highlighting the need for more methodological research to extend reporting on innovation in firms. Innovation is a complex process for organizations, and despite efforts to devise strategies at the organizational level, there remains a lack of a clear understanding of the factors and mechanisms that facilitate or impede innovation (Wechtler et al., 2024). Several studies suggest that CSR is a determinant of firms' innovative activities (Marco-Lajara et al., 2023; Mithani, 2017), while others claim that a company's innovation-related activity influences CSR (e.g., González-Morales & Talavera, 2019). This suggests a mutual influence, as noted by O'Reilly & Tushman (2013) and Yang et al. (2024). In this context, our general research question involves analyzing how firm innovation and CSR actions are related in the business environment. Given the importance of innovation and CSR at a firm's strategic level from both business and research perspectives, the main *objective* of this study is to link these two areas of research by conducting an exhaustive framework-based systematic literature review (SLR) (Paul & Criado, 2020). Conducting this literature review meets a scientific need and aims to address the following research questions:

RQ1: When considering direct relationships, what direction (causality) and sign (positive, negative, or non-significant) between firm innovation and CSR predominate in the previous literature? What are the main theories used to justify this relationship?

RQ2: When examining the direction and sign of the direct relationship between firm innovation and CSR, do the measures of firm innovation and CSR, methods employed, context (country and sector), and time period serve as contingent factors?

RQ3: Beyond direct effects, are firm innovation and CSR involved in more complex relationships?

Our study makes several contributions to the literature. First, given the scarcity of such research, we offer a more comprehensive and updated review of the literature on the firm innovation-CSR relationship spanning the last 25 years. In this way, we provide more details about the type of relationship most frequently found and its main characteristics. Regarding this topic, we should mention the bibliometric analyses conducted by Chu et al. (2022) and Zhao & Yin (2024). Their studies reveal the evolution and tendencies in innovation and CSR and identify three distinct stages in the evolution of this dual theme as well as categorizing the major challenges and approaches encountered by companies in this context, respectively. In addition, as far as we know, only Ratajczak & Szutowski (2016) have conducted a systematic review of the literature on firm innovation and CSR

literature who used the Scopus database and considered 24 articles published between 2000 and 2014. However, more than 5 years have passed since that study was conducted. According to Paul et al. (2021), researchers can decide to perform an SLR when there is no recent SLR in the domain and the domain has substantially progressed during the period (at least 40 new articles have been published in the previous five years). Additionally, we considered more studies, searched two databases (Web of Science [WOS] and Scopus), used the Scientific Procedures and Rationales for Systematic Literature Review (SPAR-4-SLR) as the main method/protocol (Paul et al., 2021) (filtering the final sample according to the journals' quality), and adopted the theories-contexts-methods (TCM) approach.

Second, we identify and explain the factors that may condition/affect the evidence for a direct relationship between firm innovation and CSR. In contrast to similar SLRs in the field (Strazzullo et al., 2025; Yang et al., 2024), we consider, for example, a wider variety of measures (without limits on the type of innovation or CSR) to include all existing literature on the relationships between these concepts. Based on 67 articles spanning 1996–2023, Yang et al. (2024) focused on technological innovation and CSR, analyzing only the unidirectional relationship between CSR and technological innovation in detail. Focusing on the relationship between open innovation and CSR, Strazzullo et al. (2025) conducted an SLR based on 51 articles and developed a framework to understand how companies leverage collaboration with different stakeholders to achieve sustainability. Apart from the measures employed, we consider the selected period, sample, region, and sector in which the study was carried out as possible contingent factors in the direct relationship between the investigated variables.

Third, beyond analyzing direct effects and possible contingent factors, we also identify some more complex models that firm innovation and CSR are involved in. Some variables are identified as mediators explaining CSR's effect on firm innovation. Moreover, CSR and innovation seem to play mediating or moderating roles in their respective relationships with firm performance in a broad sense. Thus, we provide evidence that can help companies strategically optimize the relationships between three key aspects (innovation, CSR, and performance).

Finally, this study advances our theoretical understanding of the innovation-CSR nexus in three ways. First, by identifying a dominant reliance on Stakeholder Theory and the Resource-Based View, we reveal the limitations of interpreting the relationship through isolated lenses. We argue that future research should combine complementary perspectives, for example, using Institutional and Signaling Theories to explain legitimacy-driven innovation or adopting the Resource-Based View and Dynamic Capabilities to capture the evolutionary nature of CSR-innovation interactions. Second, we reveal that each theory's explanatory power is contingent upon contextual factors. This suggests a need to theorize not only which frameworks are used but also when and where they are most relevant. Third, we extend the debate by showing that firm innovation and CSR are not only linked to each other but jointly function as strategic drivers shaping broader outcomes such as performance. This opens up new avenues for theorizing CSR and innovation as complementary mechanisms at the firm's strategic level, rather than as isolated constructs, and in this way also advances the empirical knowledge in these fields.

This SLR reveals that most empirical studies have focused on the direct effect of CSR on firm innovation, with research particularly concentrated in Asia and Europe. Overall, the evidence supports a generally positive effect of CSR on innovation, although the significance of this relationship varies according to context. Geographical location and, to a lesser extent, industry/sector appear to shape this relationship in previous research. By contrast, studies examining the influence of innovation on CSR have yielded mixed, inconsistent results. Methodologically, the literature is dominated by longitudinal analyses, particularly those considering CSR-to-innovation, whereas cross-sectional approaches are more common in analyses of the reverse relationship. Furthermore, the sample and method (longitudinal versus cross-sectional) seem to affect the empirical findings. Beyond direct effects, our review identifies more complex dynamics, notably mediation/moderation processes, in which both innovation and CSR can be involved together.

The rest of this paper is organized as follows: The next section explains the method used for the SLR. Next, the main results are presented in response to the research questions. These findings are further analyzed and interpreted in the discussion section, connecting them to existing theoretical frameworks and contextual factors. Building on the identified gaps, we then propose directions for future research. Finally, the paper concludes by summarizing the contributions, outlining the theoretical and practical implications, and acknowledging the limitations.

RESEARCH METHOD

SPAR-4 SLR protocol

We conduct a systematic framework-based review focusing on widely used methods, theories, and constructs. We adopt this approach because framework-based reviews have robust structures. In line with other management studies (e.g., Blommerde, 2023; Reina et al., 2023), we use the SPAR-4-SLR protocol developed by Paul et al. (2021) to logically, rigorously, and transparently synthesize the literature. This protocol comprises three stages (assembling, arranging, and assessing) and six substages (identification, acquisition, organization, purification, evaluation, and reporting), which we discuss below and summarize in Figure 1.

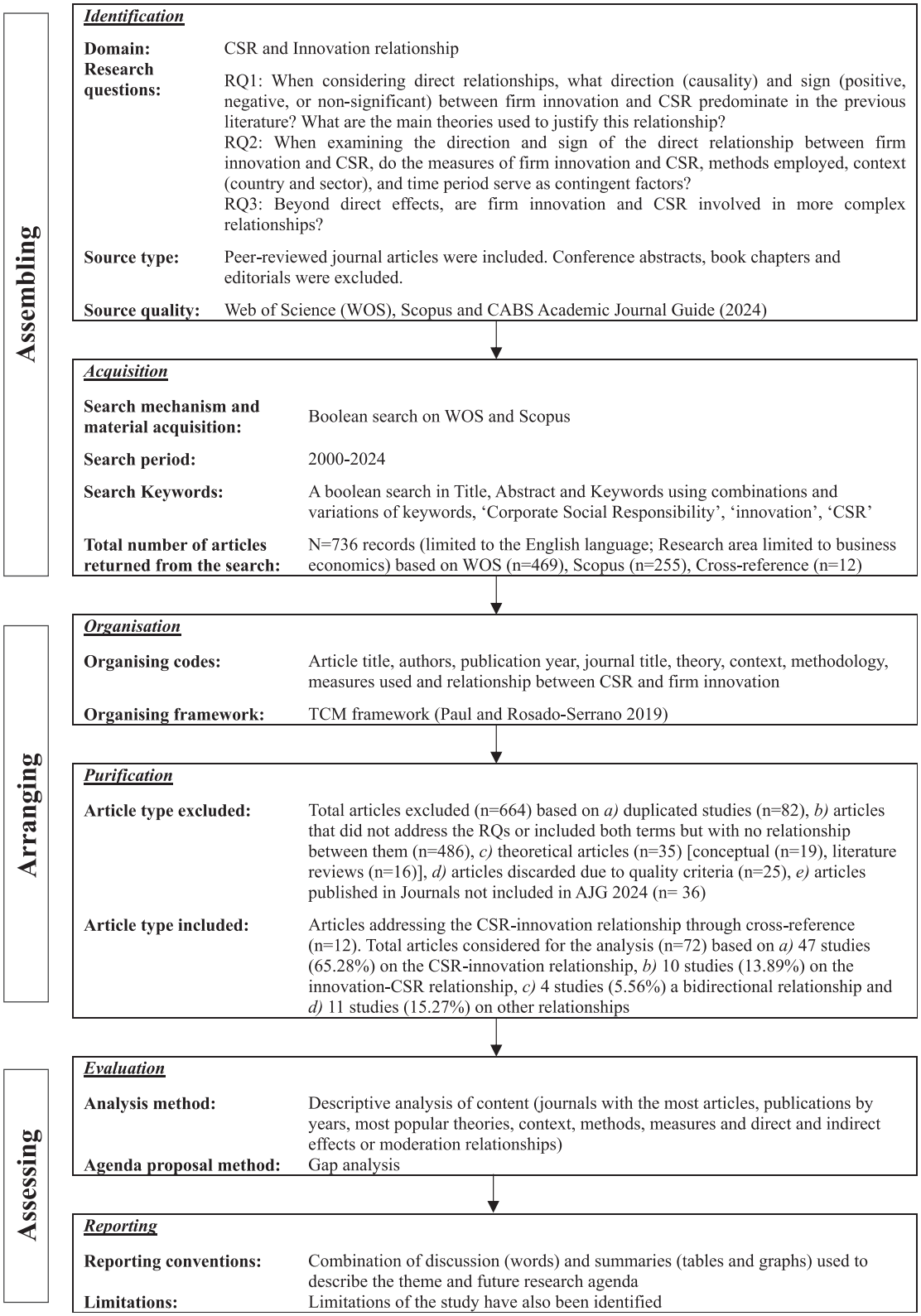


FIGURE 1 SPAR-4-SRL framework for systematic review. *Note*: Adapted from Paul et al. (2021) and Khatri and Duggal (2022).

Stage 1: Assembling

This stage involves identifying and acquiring relevant literature. The domain, research questions, source type, and source quality are ascertained in the identification substage. Only journal articles are included in the search. Conference abstracts, book chapters, editorials, dissertations, and review articles are excluded. Source quality is determined using the most recent update of the Chartered Association of Business Schools Academic Journal Guide

(AJG) (2024), which is one of the most popular rankings of business journals (Paul et al., 2021).

In the acquisition substage and for the structured keyword search, we use WOS as the primary database and Scopus as a secondary database for cross-checking (Paul et al., 2021). Filtering and analysing the results took place afterwards. The search was conducted on December 2, 2024. In the first search, the keywords "CSR" and "innovation," "CSR & innovation," "corporate social responsibility & innovation," and "sustainability & innovation" were used. These terms appear in the titles, abstracts, and keywords of the articles. Figure 1 depicts the details of the search phase. Because of the large number of articles using these terms and the fact that many are not related to the area of this research, we refine the search. The term "Business Economics" is selected in the section "research areas" on the search page of WOS and "Business, Management and Accounting" on the search page of Scopus. As stated above, we also filter the publication type, and only academic articles are selected. To allow the search to select articles without limitations, no specific period is selected. After this first filtering, the search, limited to English-language articles, results in 736 articles (469 from WOS, 255 from Scopus, and 12 from cross-references), serving as the starting point.

Stage 2: Arranging

To organize the paper, the bibliographic details are recorded first (see Figure 1). At this stage, the TCM approach, proposed by Paul et al. (2017), is chosen as the overall organizing framework, as it allows multiple aspects of the literature to be considered. The purification stage entails three main stages of screening and determining the eligibility of the papers. First, the results from the two databases are assessed individually based on the source type and quality criteria established in the identification stage. Second, this list is checked for duplicates between databases, and 82 sources are removed. Third, the abstracts and/or full texts (when necessary) of the 654 remaining articles are screened for relevance to this review (Figure 1 shows the main reasons for discarding manuscripts).

The criteria for *inclusion* are as follows: The articles (1) are published in English, (2) are published in journals using a peer-review system, and (3) include the terms "innovation" and "CSR" in their research questions. Meanwhile, the *exclusion* criteria are as follows: The studies (1) do not focus on the relationship between firm innovation and CSR; (2) deal with our research topic and include the search terms but do not respond to our research questions; (3) are not fully accessible; (4) are conference documents, books, or book chapters; (5) are not in English; and (6) are not published in journals employing peer review.

Our *quality criteria* ensure the reliability and validity of the articles included in the analysis. These quality considerations help us evaluate the methodological robustness and relevance of each study in response to our research questions. The aim of applying these criteria is to select the most rigorous and pertinent work, thus improving confidence in the findings and conclusions drawn from this SLR (Luchini et al., 2021). The quality criteria include the following questions, which are applied to each article:

1. Is the aim of the research clearly stated in the abstract and/or introduction?
2. Is the study design appropriate for addressing the aims of the study? Are the hypotheses and propositions suitably presented? Are they empirically tested?
3. Is the country/sector/sample used to test the hypotheses mentioned?
4. Does the article provide a measure of firm innovation and CSR?
5. Are the research objectives and questions posed explicitly answered in the conclusion section?
6. Are the limitations of the study clearly stated?
7. Are the study's practical implications described?

We select articles that meet these criteria for the study, ultimately obtaining 72 articles spanning 25 years as the final sample.

Stage 3: Assessing

Given its framework-based approach, this review relies on the content and thematic analyses of eligible articles (evaluation substage). Based on the TCM framework, the research team jointly coded the theoretical themes, contexts (countries and industries), and methodologies of each article in Excel. This content analysis follows a combined inductive-deductive approach, and the emerging codes and labels are grouped into broader categories.

The final phase (reporting) entails developing condensed tables and visuals based on the extensive content analysis of the evaluation phase, as detailed below. A future research agenda is developed based on the gap analysis. A combination of discussion (words) and summaries (tables) is used, and the limitations of the studies are identified.

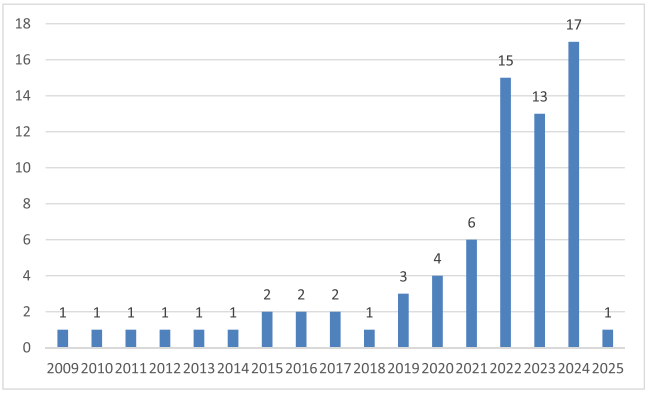
Profile of extant research

Following the review protocol, this initial bibliographic analysis consists of counting and classifying the articles according to the relationships analyzed, journal outlet, and publication year.

As shown in Figure 1, there seem to be four types of relationships between firm innovation and CSR in the articles. First, some propose a direct effect of CSR on firm innovation. These account for 47 articles (65.28% of articles in the sample). Second, there are the articles that consider the opposite effect, the direct effect of firm

innovation on CSR (10 articles, 13.89%). More than 5% propose a bidirectional relationship between firm innovation and CSR (four studies). Finally, instead of proposing a direct effect in one direction or the other, 11 studies (15.27%) consider other types of relationships, in which the variables under study are analyzed in broader models, including moderating analyses in most cases.

Graph 1 shows the number of articles in the sample published per year. A clear rising tendency can be seen in studies of the relationship between innovation and CSR, with 17 articles published in 2024, the most prolific year. While the early years between 2010 and 2020 include only a few studies, from 2021 to 2025, there is an increasing amount of research on this topic (52 articles). This further evidences the growing relevance of the field and thus the relevance of this review. Graph 2 shows the number of articles published by each journal. Overall, the 72 articles included in this review appear in 36 peer-reviewed journals. However, only 12 journals published two or more articles, and 24 had only one publication each. The two journals with the most publications are *"Journal of Cleaner Production"* (12) and *"Corporate Social Responsibility and Environmental Management"* (6).



GRAPH 1 Distribution of articles per year.

GRAPH 2 Distribution of articles per journal. *Note*: Among the journals with one article are: "Asia-Pacific Journal of Business", "British Food Journal", "British Journal of Management", "Business Ethics, the Environment & Responsibility", "Business Research Quarterly", "Cogent Business & Management", "Competitiveness Review: An International Business Journal", "Engineering, Construction and Architectural Management", "International Journal of Production Economics", "International Journal of Technology Management", "Industrial Management & Data Systems", "Journal of Business Research", "Journal of Business Finance & Accounting", "Journal of Corporate Finance", "Journal of Innovation Economics & Management", "Journal of Global Information Management", "Journal of Intellectual Capital", "Journal of Service Research", "Kybernetes", "Operations Management research", "Social Responsibility Journal", "Sustainability Accounting Management and Policy", "Technology in Society", and "Young Consumers".

RESULTS

Using the TCM framework, our review identifies widely used theories in a particular domain (the relationship between firm innovation and CSR) and suggests directions for future research based on a theory (theoretical underpinnings and paradigms used to explain the interrelationships among constructs), context (circumstances shaping the research setting), and methodology (measurement scales, research designs and analytical tools) framework (Paul et al., 2023). This framework helps deliver the highest level of clarity and coverage (i.e., breadth and depth) in our review. Previous studies have used this framework to develop their reviews (Mishra et al., 2021; Pfajfar et al., 2024).

Appendix 1 focuses on studies that analyze the direct effect of CSR on innovation. Appendix 2 shows articles analyzing effects in the opposite direction. Finally, Appendix 3 presents studies that consider the bidirectional relationship between the two concepts. The three annexes provide information for each article about the theories employed, the empirical design (sample, period, firm innovation and CSR measures, and methodology), and the main findings.

Studies analyzing the influence of CSR on firm innovation

This is the most analyzed relationship in previous studies, and, in general, regardless of the sample, period, or measure of CSR and innovation, there seems to be a significant and positive effect of CSR on firm innovation. We should note that some studies used samples from the beginning of the 2000s (Bocquet et al., 2013; Bohas & Poussing, 2016; Demirel & Kesidou, 2019) and found positive, negative, and non-significant relationships that varied depending on the measures used. However, the latest studies that consider more recent samples show a positive and significant relationship, regardless of the measure. In this sense, studies analyzing CSR's effect on green innovation or eco-innovation stand out. In the few cases where there is a non-significant effect (Belas et al., 2021; Demirel & Kesidou, 2019; Ureña Espaillat et al., 2022; Zastempowski & Cyfert, 2021), sometimes stemming from CSR measures, or a negative and significant effect (Bocquet et al., 2013; Bohas &

TABLE 1 Theories, context and method used in the CSR-innovation relationship.

Panel A. Influence of CSR on firm innovation							
Theories		**Country**		**Sector**		**Method**	
Stakeholders	**25** (29.76%)	Asia	**17** (36.17%)	Multi-sector	**27** (57.44%)	PLS, PLS-SEM and/or SEM	**22** (36.07%)
Resource-Based View	**21** (25%)	Europe	**14** (29.78%)	Manufacturing	**8** (17.02%)	Regression	**8** (13.11%)
Institutional Theory	**6** (7.15%)	Multi-country	**10** (21.27%)	Agri-food sector	**4** (8.51%)	Factor Analysis	**5** (8.21%)
Agency Theory	**4** (4.76%)	Central and South America	**3** (6.39%)	Textil	**3** (6.38%)	Case Studies	**5** (8.21%)
Dynamic Capabilities	**4** (4.76%)	Anglo-Saxons	**2** (4.26%)	Mining	**2** (4.26%)	Fixed and/or random effects model	**4** (6.56%)
Knowledge	**3** (3.58%)	Africa	**1** (2.13%)	Energy	**1** (2.13%)	Probit	**4** (6.56%)
Innovation Diffussion	**2** (2.38%)			Transport and Logistics	**1** (2.13%)	PCA[2]	**3** (4.91%)
Signalling Theory	**2** (2.38%)			Winegrowing	**1** (2.13%)	Logit	**3** (4.91%)
Sustainability	**2** (2.38%)					Content Analayis	**2** (3.27%)
Other theories used just once[1]	**15** (17.85%)					Instrumental variables	**2** (3.27%)
						Tobit	**2** (3.27%)
						Covariance-based structural equation model	**1** (1.65%)
Total	**84**		**47**		**47**		**61**
Panel A. *Influence of firm innovation on CSR*							
Theories		***Country***		***Sector***		***Method***	
Stakeholders	**3** (30%)	Europe	**4** (40%)	Multi-sector	**6** (60%)	PLS, PLS-SEM and SEM	**6** (50%)
Resource-Based View	**2** (20%)	Asia	**2** (20%)	Fashion industry	**1** (10%)	Random and/or fixed effects model	**2** (16.68%)
Complementary	**1** (10%)	Multi-country	**2** (20%)	Energy	**1** (10%)	Instrumental variables	**1** (8.33%)
Contingency	**1** (10%)	Africa	**1** (10%)	Construction	**1** (10%)	Regression analysis	**1** (8.33%)
Moral Licensing	**1** (10%)	Anglo-Saxons	**1** (10%)	Manufacturing	**1** (10%)	Weight Least squares	**1** (8.33%)
Natural Resource-Based View	**1** (10%)					Latent Dirichlet Allocation	**1** (8.33%)
Dynamic Capabilities	**1** (10%)						
Total	**10**		**10**		**10**		**12**

Note: 1. The columns of this Table show the number of studies using each theory. The theories used less than once are the following: Ambidexterity, Contingency, Eco-innovation, Intellectual Capital, Leadership, Legitimacy, Natural Resource, Opportunistic Cost, organisational, Resource Dependence, Scarcity Economics, Shared Value, Social Capital, Stewardship, and Upper Echelons. 2. PCA denotes Principal Components Analysis.

Poussing, 2016), a slight bias or pattern of behavior can be identified because they are older samples, even though the articles are more recently published. In other cases, such as Turker & Ozmen (2021), CSR measures affect innovation. For example, CSR can drive radical innovation only when initiatives are proactive and strategic and address emerging sustainability challenges. By contrast, reactive or philanthropic CSR leads to incremental changes.

In four of these studies (8.5%), the analysis was more complete and we identified variables that might explain the influence of CSR on firm innovation. Adopting employee involvement and supplier collaboration (Zhou et al., 2020), through competitive advantage (Jenkins, 2009) or green practices (Hou et al., 2025), and structural capital (Hamdoun et al., 2024) seems to play a mediating role in the relationship between CSR and innovation. We should also mention that in 36.17% of these studies (17 out of 47), in addition to the direct influence of CSR on innovation, firm innovation seemed to play a mediating role in the relationship between CSR and other variables, such as firm performance (e.g., Malpani et al., 2025), firm competitiveness (Padilla-Lozano & Collazzo, 2022), green supply chain management (Le, Vo, & Venkatesh, 2022), sustainable performance/practices (e.g., Yasmeen & Longsheng, 2024),

export performance (Martos-Pedrero et al., 2023), green competitiveness (Riaz et al., 2023), and urban-inclusive green growth (Wu et al., 2024).

Researchers draw on a wide range of theoretical perspectives (24 in total) to explain the mechanisms linking CSR and firm innovation. Among them, Stakeholder Theory and the Resource-Based View are the most frequently used (Table 1, Panel A). These approaches provide a robust foundation for understanding how CSR can act as a driver of innovation. Stakeholder Theory posits that firms engaging in CSR are better positioned to meet the expectations of key stakeholders such as customers, employees, and suppliers, thereby fostering trust, legitimacy, and access to external knowledge and resources, which stimulate innovation (e.g., Khan et al., 2023; Martinez-Conesa et al., 2017). Resource-Based View, meanwhile, suggests that CSR practices contribute to the accumulation of valuable, rare, and inimitable resources—such as reputational capital, organizational culture, and employee commitment—which enhance a firm's innovation capabilities over time (e.g., Bocquet et al., 2013; Yasmeen & Longsheng, 2024). This internal capacity-building is particularly relevant for firms that strategically adopt CSR, turning ethical and environmental commitments into innovation-oriented capabilities. Although used to a lesser extent, Agency and Institutional Theories offer complementary insights shaping the CSR-innovation relationship. From an agency perspective, CSR can influence firm innovation through incentive alignment mechanisms, such as executive compensation and governance structures that encourage long-term, sustainability-oriented investment decisions (e.g., Hou et al., 2025; Tsang et al., 2021). Institutional Theory, in turn, emphasizes how regulatory, normative, and cultural pressures shape firms' CSR strategies and their translation into innovation outcomes (e.g., Bohas & Poussing, 2016; Wu et al., 2024).

These results require a deeper analysis where the samples used and the influence of the context in which the research was conducted are studied in greater detail (Table 1, Panel A). In terms of countries, 36.17% of the studies only consider Asian countries, followed by studies of European countries (29.78%) or multi-country samples (21.27%). Regarding sectors, while most studies (57.44%) analyze a variety of sectors, some focus on specific industries, such as the manufacturing sector (17.02%). Meanwhile, 8% focus on the agri-food sector and 6% on the textile sector, finding positive and significant effects in most cases.

Methods refer to the research approaches and analytical tools used by researchers. Of the 47 studies, 68.08% have a longitudinal design, while the rest are cross-sectional studies. Regarding methods, PLS, PLS-SEM, and/or SEM are used in 36.07% of the cases, followed by regression, factor analysis, and case studies (13.11%, 8.21%, and 8.21%, respectively). Some less frequently applied techniques include static panel data analysis (fixed and/or random effects models) and probit models (6.56% in both cases).

Studies analyzing the influence of firm innovation on CSR

Again, innovation generally has a positive and significant effect on CSR (four out of 10 articles, 40% of the cases). This effect is identified in the European context, particularly in Spain (Cegarra-Navarro et al., 2016), Sweden (Pedersen et al., 2018), the UK (Dey et al., 2020), and Slovakia (Supeková et al., 2023). Analyzing keyword co-occurrence in 11,954 sustainability-related articles spanning 1994–2021, Burbano et al. (2023) revealed that innovation's role in facilitating firms' adoption of sustainable practices is drawing increasing interest. Sustainable innovation is considered a key driver of sustainable development.

We should mention, however, that one of the 10 empirical studies of a sample of Chinese companies identified an inverted U-shaped relationship (Zheng et al., 2022). In other cases, a non-significant effect was observed (González-Ramirez et al., 2025) or a negative and significant effect was observed (Chu et al., 2024) in Spain and China, respectively. In still other cases, the results show that the significant influence is positive or negative depending on the measure of the variables (Awawdeh et al., 2022; Khalil et al., 2022). In contrast to the previous relationship (CSR's effect on firm innovation), no study has analyzed which mediating variables explain the indirect effect of innovation on CSR. However, two studies (Cegarra-Navarro et al., 2016; Dey et al., 2020) found that CSR plays a mediating role in the relationship between firm innovation and performance.

In this relationship, Stakeholder Theory and Resource-Based View Theory also provide the dominant theoretical foundations (Table 1, Panel B). In the Resource-Based View perspective, innovation—particularly in the form of technological, process, or organizational advancements—represents a strategic capability that enables firms to reconfigure resources and develop CSR-related competencies. Innovation allows firms to adopt more efficient, responsible, and sustainable practices that can subsequently be embedded into their CSR strategies (Cegarra-Navarro et al., 2016). Similarly, Stakeholder Theory argues that innovation enhances a firm's ability to respond to evolving stakeholder expectations regarding social and environmental responsibility. By developing social innovations and eco-innovations, firms can better align their operations with stakeholder values, increase legitimacy, and reinforce CSR engagement (Zheng et al., 2022). Innovation is not only an outcome of CSR but also a catalyst for its development, enabling firms to anticipate social demands and translate them into responsible business practices.

Regarding contexts, in these studies, the samples were mainly in European countries (40%). Most studies use a

sample of companies belonging to different sectors (60%) and find positive and significant effects. There are also specific studies analyzing the influence of innovation on CSR in the fashion industry (Pedersen et al., 2018), as well as in the energy (Awawdeh et al., 2022), construction, and manufacturing sectors (Zheng et al., 2022, and Chu et al., 2024, respectively). In these studies, the effect of this relationship also depends on the activity sector, as there is no clear pattern, since the four previous studies showed different results.

In terms of methods, the body of literature is dominated by cross-sectional studies (60%). In 50% of the cases, PLS, PLS-SEM, and SEM are the main methods used to test the hypotheses, followed by fixed and/or random effects models (16.68%).

Studies analyzing the bidirectional relationship between innovation and CSR

This relationship is the least studied, and there is no clear pattern. While Gallego-Álvarez et al. (2011) point to a negative and significant relationship in both directions, the other studies show a positive and significant relationship between CSR and innovation. The biggest discrepancies in the relationship between innovation and CSR are found in the remaining studies, showing a positive and significant relationship (Basile et al., 2022), a non-significant relationship (Lai et al., 2015), a significant negative relationship (Gallego-Álvarez et al. 2011), and a positive relationship (Lippolis et al., 2023). In the latter study, however, no statistical analysis or significance is reported because it focused on a specific case study and a specific measure (e.g., open innovation). Regarding the periods in which the studies were carried out, the study with the largest multi-country sample was from 2011. The theories most often used in these studies are Stakeholders Theory and the Resource-Based View, and the studies focus on Taiwan, Iran, Italy, and multi-country samples.

Studies with other types of (not direct) relationships between firms' innovation and CSR

We analyze 11 articles showing other types of relationships between firm innovation and CSR to determine whether a common pattern can be discerned. First, innovative activity is identified as a possible moderator in the relationship between CSR and business performance. Studies analyzing the role of CSR in moderating other relationships in which innovation appears as a dependent or explanatory variable should also be highlighted. Finally, we identify a third pattern that considers CSR and innovation as mediating variables in other relationships.

Firm innovation moderates the relationship between social and environmental aspects and economic performance (Baek & Lee, 2024). Similarly, Doni & Fiameni (2024) confirm that for medium- and low-innovation companies, there is no relationship (or a negative relationship) between adopting reporting guidelines and standards (related to CSR/sustainability) and financial variables. For highly innovative companies, meanwhile, there is a positive relationship between adopting reporting guidelines and standards and economic-financial variables. Ghanbarpour et al. (2024) focused on how CSR affects client satisfaction and company profit and how this relationship is moderated by innovation. Another study (Ilyas & Osiyevskyy, 2022) finds that firm innovation amplifies the effect of sustainable values on profits. Mondal et al. (2024) suggest that green innovation can moderate the relationship between CSR and sustainable performance, although this effect is not empirically supported in their analysis.

In addition, Xu et al. (2022) propose CSR as a moderating variable in the relationship between green innovation and environmental, social, and governance (ESG). Along this line, de Abreu et al. (2023) investigate the effect of board member diversity on environmental policies and firm innovation while analyzing CSR's moderating effect on this relationship. Liu et al. (2022) studied how government subsidies affect firm innovation and the role CSR plays in amplifying the effects of subsidies. Similarly, the moderating effect of CSR, which reduces the risk of innovation at the company level, has also been studied (Suto & Takehara, 2022). Based on a sample of small and medium-sized Pakistani enterprises, organizational CSR commitment is also found to moderate the direct relationship between green core competencies and innovation performance (Shao et al., 2024).

Finally, Le (2022) analyzed the relationship between sustainable performance and sustainable corporate strategies for small and medium-sized enterprises, exploring how CSR and green innovation mediate the relationship between green strategies and sustainable firm performance in the context of emerging economies.

DISCUSSION

In what follows, we provide an overview of the findings with reference to our three research questions.

Regarding **RQ1** (*When considering direct relationships, what direction (causality) and sign (positive, negative, or non-significant) between firm innovation and CSR predominate in the previous literature? What are the main theories used to justify this relationship*?), our SLR highlights that most studies identify a direct and positive effect between both variables, regardless of the direction and number of studies.

CSR's effect on firm innovation is consistent with two complementary perspectives. According to Stakeholder Theory, CSR strengthens legitimacy and trust in external actors, reducing information asymmetry and granting

access to resources and knowledge that stimulate innovation (Cook et al., 2019; Martinez-Conesa et al., 2017). For example, stakeholder engagement and transparent practices create opportunities to capture ideas that align with social and environmental demands. In the Resource-Based View, CSR generates distinctive capabilities such as employee motivation, organizational learning, and ethical climates, which foster creativity and knowledge sharing (Bocquet et al., 2013). CSR also facilitates resource mobilization and improves access to financing and investment efficiency, which reinforces firms' R&D capacity (Cook et al., 2019). Thus, CSR provides a dual pathway to innovation: on the one hand, externally, by enhancing legitimacy, and on the other hand internally, by building strategic capabilities.

The reverse direction, although less explored, also tends to show in some cases positive effects. In the Resource-Based View, innovation provides firms with slack resources and technological expertise, which lower the costs of CSR initiatives and facilitate their implementation. Stakeholder Theory complements this view by suggesting that innovative firms are better positioned to identify and respond to social and environmental demands, thus integrating CSR into their strategies to strengthen their legitimacy and competitiveness (Pedersen et al., 2018). Therefore, innovation creates conditions for CSR adoption by equipping firms with the necessary resources and strategic flexibility.

Although these positive, direct, unidirectional effects dominate, evidence for bidirectional dynamics remains scarce and inconclusive, as some studies report positive effects (e.g., Basile et al., 2022) while others find, for example, negative associations (Gallego-Álvarez et al., 2011; Lai et al., 2015). Such inconsistency reflects methodological limitations and theoretical tensions. According to the Resource-Based View, CSR and innovation can co-evolve through the accumulation of strategic resources, whereas from an agency perspective, CSR may also be perceived as a cost that constrains firms' innovative capacity (Hou et al., 2025; Tsang et al., 2021; Xu, 2025).

Regarding **RQ2** (*When examining the direction and sign of the direct relationship between firm innovation and CSR, do the measures of firm innovation and CSR, methods employed, context (country and sector), and time period serve as contingent factors?*), several factors are analyzed.

First, measurement alignment is critical. Studies have consistently reported positive effects when CSR and innovation indicators – such as environmental CSR and green innovation- are conceptually coherent (Khan et al., 2023; Yasmeen & Longsheng, 2024). By contrast, when CSR is measured through broad or symbolic proxies (e.g., disclosure scores and voluntary reporting), and innovation is captured by generic or input-based indicators (e.g., R&D intensity), the results are often non-significant or even negative (Bohas & Poussing, 2016; González-Ramírez et al., 2025). These patterns suggest that inconsistencies are not random but may stem from a lack of conceptual alignment between constructs. When measures are poorly matched, it becomes difficult to observe the mechanisms highlighted by Stakeholder and Institutional Theory, namely, how legitimacy and regulatory fit act as key drivers of innovation.

Second, methodological design influences the direction of the results. Cross-sectional studies tend to underestimate lagged effects and do not always support positive associations (e.g., Lai et al., 2015), whereas longitudinal approaches reveal more nuanced dynamics, including negative short-term trade-offs (Chu et al., 2024; Khalil et al., 2022). This reflects the coexistence of two theoretical logics: the Resource-Based View, which emphasizes cumulative capacity building that strengthens innovation over time, and Agency Theory, which points to short-term costs that can initially constrain firms' innovative efforts, especially when CSR investments are perceived as costs. Longitudinal evidence shows that aligning executive compensation with CSR objectives helps mitigate these agency frictions and transforms short-term trade-offs into long-term innovation gains (Hou et al., 2025; Tsang et al., 2021).

Third, contextual conditions play a crucial role. In Asian economies, strong institutional pressures and policy frameworks position CSR as a lever for innovation, particularly in the green and process domains (Chang et al., 2023; Khan et al., 2023), aligning with Institutional Theory. The prevalence of Asia-based studies also reflects enabling conditions such as rapid economic growth, environmental challenges that increase policy attention to sustainability, and cultural values, such as collective well-being, all of which reinforce CSR as a strategic driver of innovation (Ling, 2019). By contrast, in regions with weaker regulations, such as parts of Latin America and Africa, innovation does not systematically lead to CSR, as firms often prioritize competitiveness over social responsibility (Ureña Espaillat et al., 2022). In Anglo-Saxon contexts (e.g., US, UK), the evidence is more heterogeneous, especially when CSR is measured through general indicators, and innovation refers to non-technological forms, suggesting that CSR and innovation are often managed as separate strategic areas (Cook et al., 2019; Demirel & Kesidou, 2019). Meanwhile, studies in continental Europe more consistently report positive associations, linked to stronger stakeholder engagement and collaborative institutional frameworks. This contrast highlights how institutional strength and cultural expectations shape whether CSR is perceived as a strategic long-term investment or a discretionary short-term cost, in line with Agency Theory. In contexts characterized by strong regulatory enforcement, stakeholder protection, and long-term-oriented governance systems, institutional pressures reduce managerial opportunism and align executive incentives with sustainability and innovation objectives. However, in

weaker institutional environments, where shareholder primacy and short-term financial pressures dominate, CSR is more likely to be treated as a discretionary expense, intensifying agency conflicts and limiting its innovative potential (Marais, Reynaud, & Vilanova, 2020; Tsang et al., 2021).

Sectoral conditions also matter: Industries with globalized supply chains (e.g., agri-food and wine) are subject to intense stakeholder scrutiny, reinforcing positive CSR-innovation links (Marco-Lajara et al., 2023), while more opaque sectors (e.g., mining and construction) display weaker or symbolic CSR practices.

Finally, temporal evolution also shapes the results. Older studies tend to report inconsistent effects, partly because CSR practices are less institutionalized and more symbolic. By contrast, recent evidence shows positive associations, reflecting the increasing integration of sustainability into corporate strategies and reporting practices. Thus, the time effect is also linked to the progressive integration of CSR into corporate strategy, which has made its connection to innovation more transparent and measurable.

Finally, with regard to **RQ3** (*Beyond direct effects, are firm innovation and CSR involved in more complex relationships?*), our review highlights the fact that the innovation-CSR nexus often operates through mediating and moderating mechanisms rather than simple direct effects.

First, several studies identify mediating effects. Innovation acts as a mediator in the CSR-performance relationship: CSR generates intangible resources such as legitimacy, trust, and human capital, which are transformed into competitive advantage through new products, processes, or organizational forms (Martinez-Conesa et al., 2017). Conversely, CSR can mediate the innovation-performance relationship, as innovative capabilities encourage firms to adopt responsible practices that subsequently enhance market acceptance (Padilla-Lozano & Collazzo, 2022). Taken together, these findings show that CSR and firm innovation mainly act as mediating channels through which resources and stakeholder expectations translate into performance outcomes, in line with the Resource-Based View and Stakeholder Theory.

Second, our review reveals important moderating effects. Specifically, both CSR and firm innovation frequently operate as moderators in broader relationships with performance and sustainability outcomes. For example, firm innovation tends to amplify the positive impact of CSR on client satisfaction, financial performance, or the adoption of sustainability standards, whereas CSR often conditions how innovation translates into organizational or environmental outcomes. These moderating roles are consistent with Stakeholder Theory, since they illustrate how firms adapt their strategies to align with stakeholder demands, and with the Resource-Based View, as CSR and innovation enhance or constrain the transformation of resources into competitive advantages. At the same time, Agency Theory helps explain why the strength of these moderating effects may vary depending on firms' orientation toward long-term versus short-term goals. Thus, when agency conflicts are strong, CSR may be used opportunistically as a reputational shield or financial tool, weakening its role as a strategic determinant of innovation and performance (Hou et al., 2025; Xu, 2025).

Finally, some studies integrate both mediating and moderating mechanisms. For example, Le, Vo, & Venkatesh (2022) show that CSR and green innovation jointly mediate the relationship between sustainability strategies and firm performance, illustrating how CSR and innovation operate as complementary levers within firms' broader strategic frameworks. This evidence aligns with Dynamic Capabilities Theory, since firms reconfigure resources and practices to address social and environmental challenges through innovation.

FUTURE RESEARCH

Building on insights gained from the investigation of our three research questions, we identify a set of priority areas that remain underexplored in the literature, spanning theoretical, contextual, and methodological dimensions (see Table 2 for more detailed information).

Theoretical development

Future studies should go beyond the predominant use of Stakeholder Theory and the Resource-Based View. These frameworks, while highly influential, also present important limitations when applied in isolation to explain the CSR-innovation relationship. Stakeholder Theory assumes that firms respond coherently to stakeholder pressures; however, it tends to oversimplify stakeholder heterogeneity and often lacks clear guidance on how firms prioritize conflicting stakeholder demands. Moreover, it is better suited to explaining legitimacy-seeking behavior than the internal processes through which CSR is transformed into concrete innovation outcomes. Likewise, the Resource-Based View emphasizes internal resources and capabilities as drivers of competitive advantage. Nevertheless, it remains largely static and inward-looking, offering limited explanatory power regarding how external institutional pressures, regulatory change, or societal expectations shape CSR-driven innovation. Consequently, Institutional Theory warrants more attention because it can explain how regulatory and cultural pressures shape CSR strategies and their effect on innovation. This is particularly relevant in emerging industries and markets, where institutional frameworks are still evolving. Signaling Theory can provide insights into how CSR and innovation communicate a firm's strategic intent to stakeholders. At the same time, the incorporation of novel frameworks can enrich the field.

TABLE 2 Future research lines.

Research line	Specific research lines	Research gaps identified	Priority
Theories	Explore under-studied traditional theories	**To explore under-studied traditional theories such as Institutional Theory and how they impact CSR strategies in emerging sectors. Analyse how institutional and regulatory pressures affect these strategies and their impact on firm innovation. Analyse Signalling Theory in the context of CSR and innovation, exploring the signals that companies can send in terms of CSR or innovation investments or the role of firm innovation on social and sustainability initiatives. Moreover, use traditional theories to explore the main mechanisms of the CSR-Innovation relationship. For example, from the Resource-Based View, does CSR influence innovation indirectly by fostering the development of specific capabilities (such as absorptive capacity or reputation) that act as mediating mechanisms? From Stakeholder Theory, do trust and legitimacy act as transmission mechanisms?**	High
	Employment of new theories	There has been limited exploration of novel theoretical frameworks integrating CSR and innovation, especially considering the evolving context of regulatory and sustainability landscapes. It would be interesting to analyse the key mechanisms linking these concepts through the lens of Regulation Theory, Legitimacy Theory, Eco-Innovation Theory, Corporate Culture Theory, Disruptive Innovation Theory, Open Innovation Theory, or Knowledge-Based Theory.	Medium
Context	Contextual mechanisms	**Deepen research on how the cultural and economic characteristics of different regions affect the CSR-innovation relationship, especially in less studied contexts such as Latin America or Africa. Considering the higher number of studies in Asia, it is also necessary to study the impact of government policies on CSR and innovation adoption in such specific contexts. This study can be complemented by studying the influence of industry peers and the effect of belonging to environmentally sensitive industries.**	High
	Geographical patterns (countries and sectors)	**To investigate how CSR influences innovation in SMEs and start-ups within emerging markets, particularly in key sectors such as technology, fintech, and manufacturing industries that are intensive in circular economy practices, especially in regions such as Latin America, Africa and Southeast Asia.**	High
		Explore CSR's impact on the innovation of family businesses, especially in key sectors like agribusiness, sustainable tourism and retail in emerging markets. In addition, it is advisable to analyse how family ownership/control or, in general, ownership concentration moderate the relationship between CSR and firm innovation.	Medium
		Emerging sectors (creative and cultural industries): Analyse innovation in creative industries (sustainable fashion, film and publishing) in relation to CSR.	Low
		Analyse how CSR practices shape the adoption of digital technologies (AI, blockchain, automation) in traditional industries such as agriculture, construction and transport to enhance sustainability, transparency and stakeholder trust.	High
		Social enterprises and cooperatives in Latin America and Africa: Analyse CSR-driven social innovation in social enterprises and cooperatives.	Medium
		Investigate how CSR influences innovation in high-tech and renewable energy sectors, focussing on how socially responsible strategies support breakthrough innovations, green technologies and mission-driven R&D in developed and emerging markets.	High
		Investigate CSR and innovation within the EU/USA's highly regulated Banking, Energy and Pharmaceutical sectors. Despite their importance to national economies and sustainability (or high innovation in pharma), these sectors remain relatively understudied in the CSR-innovation literature.	High
		Compare how CSR and innovation strategies differ between Western models (US, Europe) and Eastern models (China, Japan), identifying cultural differences in how CSR fosters innovation in different socio-economic contexts.	Medium
		Investigate how firms responding to economic, social or environmental crises leverage innovation: whether technological, social, green or business model innovations as strategic tools reshape or enhance their CSR activities.	High
		Future studies should examine how CSR commitments focussed on improving accessibility and equity in healthcare in developing countries (Africa and Latin America) foster innovation in digital health, telemedicine and biotechnology, in contrast to innovation patterns observed in pharmaceutical companies in developed nations.	High
		Companies with different CSR maturity levels in America, Europe and Asia: Include companies at various stages of CSR maturity across regions to assess how CSR impacts innovation at different levels of maturity.	High

TABLE 2 (Continued)

Research line	Specific research lines	Research gaps identified	Priority
Methods	Sample selection	**Longitudinal studies: Examine the long-term effects focussing on cumulative and sustainable effects, particularly in the innovation-CSR relationship. For example: Are there lagged effects between innovation adoption and CSR engagement? Does technological or social innovation precede more strategic CSR practices?**	High
		Limited evidence related to multi-country studies with country-level control effects. A cross-country approach could highlight how different national contexts moderate the CSR-innovation relationship.	High
		Adopt multi-level research designs that incorporate both firm-level and country-level variables in order to capture how macro-institutional factors interact with organisational characteristics to shape the CSR–innovation relationship.	High
	Qualitative studies	**Limited exploration of qualitative data analysis of corporate reports: Perform content analysis of corporate CSR reports and surveys of innovation leaders.**	Medium
		Lack of integration of qualitative and quantitative methods in CSR-innovation research: Conduct case studies and analyse organisational characteristics through structured surveys.	Medium
	Mixed methods	**Develop new methodological models to study the CSR-innovation relationship using qualitative and quantitative combined approaches (mixed methods) such as in-depth interviews and panel data analysis. Perform meta-analysis to quantitatively synthesise existing findings.**	High
	Bidirectional relationships	**Deepen research on the bidirectional relationships between CSR and innovation, especially in multicultural contexts or emerging markets.**	High
	Effect patterns	**Explore the conditions under which the relationship between CSR and innovation adopts non-linear forms (e.g. inverted U-shape, thresholds) and the factors that explain these dynamics.**	Medium
	Measures	**Investigate the specific impact of different CSR models (e.g., strategic CSR vs. philanthropic CSR) on innovation. Similarly, most previous studies are focussed on technological innovation or green innovation. Further research specially linked to process innovation is needed. It will be necessary to consider environmental policies (such as Carbon Neutral strategies) and social policies (such as those related to gender equality and migration) when analysing the impact of CSR dimensions on firm innovation.**	High
		Disruptive innovation: Analyse how disruptive innovation influences the adoption of CSR practices or how companies with strong CSR commitments generate disruptive innovations. Does it imply greater openness to experimentation, better identification of unmet societal needs or a greater ability to attract innovative talent?	Medium
		Social innovation: Study CSR's role as a driver of social innovation in developing economies, especially in creating innovative business models with positive social impact.	High
		Clarify how ESG disclosure and ESG performance independently influence the CSR–innovation relationship across sectors. Future studies should distinguish between the effects of transparency and reporting (ESG disclosure) and those of actual sustainability outcomes (ESG performance), especially under varying institutional and regulatory settings.	High
	Mediation analysis	**Future research should investigate the mediating mechanisms that explain how innovation exerts its effects on CSR. In particular, internal factors such as human capital, absorptive capacity, organisational capabilities, sustainability-oriented leadership, stakeholder influence and employee engagement may function as key transmission channels. These mechanisms can help clarify under what conditions innovation fosters CSR (or CSR enhances innovation) by acting through strategic or operational enablers.**	High
	Moderation analysis	**Studies should explore moderating factors that shape the strength and direction of the CSR–innovation relationship. Relevant moderators include firm size, industry type, technological maturity, organisational culture, leadership style and external pressures such as regulatory intensity, public policy frameworks and competitive dynamics. These variables can explain why the same CSR initiatives lead to different innovation outcomes depending on context.**	Medium

Eco-innovation Theory provides tools for understanding how firms integrate environmental challenges into their innovation strategies. Legitimacy Theory helps distinguish between symbolic CSR reporting and substantive practices with real innovative potential. Open Innovation Theory highlights the collaborative role of stakeholders in co-developing sustainable solutions, and Knowledge-Based Theory sheds light on how firms

transform CSR-driven knowledge into innovation capabilities, particularly in digital contexts, suggesting new pathways through which CSR can enhance dynamic learning, absorptive capacity, and digital innovation. Together, these perspectives can uncover new mechanisms linking CSR and innovation in the context of digital transformation and sustainability transition.

Contextual factors

There is a need for more evidence from under-investigated regions such as Latin America and Africa, as different institutional logics, regulatory frameworks, and socioeconomic conditions may fundamentally alter the CSR-innovation nexus. In these contexts, Institutional Theory can help to explain how weak regulatory enforcement, informal norms, or institutional voids shape firms' incentives to engage in CSR and translate it into innovation. Likewise, Legitimacy Theory may clarify why firms in these regions often prioritize symbolic CSR practices to gain social acceptance, which may or may not lead to substantive innovation outcomes. Sectoral specificities also warrant more attention, particularly in environmentally sensitive industries (e.g., mining, chemicals, and energy) and high-tech and renewable sectors, where CSR may play a catalytic role in breakthrough innovations. Organizational features, such as family ownership and governance structures, should also be examined, as they condition firms' long-term orientation and willingness to integrate CSR into innovative strategies. Finally, CSR's role in supporting digital transformation and social enterprises in emerging economies is a promising avenue. Open Innovation and Knowledge-Based perspectives can explain how CSR-oriented collaborations and digital ecosystems facilitate cross-border knowledge transfer and scalable innovation.

Methods

Advancing the field requires conducting more longitudinal and multi-country studies to capture dynamic and institutional effects. Institutional Theory and cross-country perspectives naturally call for multi-level research designs that combine firm-level variables with country- or region-level institutional indicators. Such multi-level models would allow researchers to disentangle how macro-institutional contexts shape the micro-level mechanisms through which CSR translates into innovation. Considering mimetic isomorphism within the framework of Institutional Theory, firms' focus on environmental and social issues and innovation outcomes may result from pressure from industry peers. Companies in the same industry are forced to behave similarly to retain their competitiveness and avoid being perceived as a business at risk. Mixed methods that integrate quantitative and qualitative evidence can provide richer insights into the processes linking CSR and innovation. Future research should prioritize mediation and moderation analyses. Mediation tests can clarify how CSR and innovation interact with other variables. For example, whether CSR builds intangible resources such as absorptive capacity, reputation, or employee engagement, which are then channeled into innovation. Moderation analyses, in turn, can explain the conditions under which the relationship is strengthened or weakened by examining factors such as organizational culture, governance, firm size, or regulatory intensity.

CONCLUSIONS, IMPLICATIONS, AND LIMITATIONS

This SLR, which encompasses 72 articles indexed in the WOS and Scopus databases, provides an insightful synthesis of the evolving relationship between firm innovation and CSR. Most studies focus on the direct effect of CSR on firm innovation, typically reporting a positive association. However, the direct relationship between firms' strategic decisions is influenced by several contextual factors, such as context, period of analysis, and variable measurement. Our review also shows that, beyond direct relationships, studies have analyzed more complex models in terms of mediation and/or moderation, where both variables are considered, incorporating other relevant variables into the models, such as performance.

Our findings have several implications for the strategic management literature, as discussed below.

Academic and practitioner implications

From an academic perspective, this SRL attempts to advance the field by providing valuable evidence highlighting the importance of CSR for enhancing firm innovation. Thus, this study contributes to the theoretical understanding of the relationship between CSR and firm innovation by examining the different theories used in previous studies to explain how strategic decisions can affect each other. Specifically, our findings reveal the widespread use of Stakeholders and Resource-Based View theories. However, considering that other theories have also been employed in previous studies, one of our main theoretical implications is that future research should broaden the theoretical foundation to develop a more comprehensive, holistic framework for understanding how firm innovation and CSR influence each other. Moreover, identifying gaps in the literature and providing new lines of research can be useful for researchers investigating strategic decision-making. In addition, information on the methods used in previous studies can guide new researchers in this field while offering new possibilities for senior researchers.

In terms of practical implications, our results can guide firms and governments in promoting innovation, as they should be aware of the role played by CSR. These results are especially relevant for increasing market competitiveness since CSR is a fundamental strategic mechanism that helps companies gain institutional support and fosters innovation that can address global sustainability challenges.

This study also has important implications for managers. Our SLR suggests that the sector of activity is decisive, given that extractive/agricultural sectors are linked to social and environmental sustainability. In these sectors, managers are more aware of CSR regulations and routinely report social and environmental activities. A similar tendency exists in the manufacturing sector, where compliance with environmental sustainability standards is essential. Compared with the service sector, these sectors (extractive, agricultural, and manufacturing) are technology-intensive in their product and/or process innovations.

Limitations

This study has several limitations that point to opportunities for future research. First, our review only includes articles indexed in the WOS and Scopus databases. Future studies could expand this scope by incorporating other academic and regional databases. Second, a meta-analysis could complement this SLR by quantifying effect sizes and testing for statistical heterogeneity. Third, given the growing relevance of ESG criteria, future research could examine their role in driving innovation, potentially through systematic mapping techniques. Despite these limitations, this review provides a solid foundation for advancing research on the innovation-CSR relationship and offers valuable insights for designing strategic policies in the business and public sectors.

AUTHOR CONTRIBUTIONS

Daniel Alonso-Martinez: Conceptualization (equal); data curation (supporting); formal analysis (leader); methodology (equal); project administration (equal); supervision (leader); validation (leader); visualization (leader); writing—original draft (equal); writing—review and editing (equal). **Laura Cabeza-García**: Conceptualization (equal); funding acquisition (leader); methodology (equal); project administration (equal); validation (supporting); writing—original draft (equal); writing—review and editing (equal). **Santiago Mencías-Calderón**: Data curation (leader); formal analysis (supporting); resources (leader).

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CONFLICT OF INTEREST STATEMENT

The authors have no competing interests to declare.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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APPENDIX 1: Previous evidence on the effect of CSR on business innovation

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
Jenkins (2009) (Journal of Business Ethics)	Resource-Based View Dynamic Capabilities Stakeholder Theory	24 SMEs in the UK from manufacturing, services, and retail. 2006–2007	Innovation in terms of new processes, products, and services	Strategic CSR measured through 3 dimensions: environmental responsibility, community engagement, and employee relations initiatives	Qualitative/Multiple case study with semi-structured interviews	Positive relationship through competitive advantage; no statistical analysis or significance reported
Wagner (2010) (Journal of Business Ethics)	Stewardship	252 firms in the Standard & Poor's 500 Index (US). 1993–2003	Innovation with high social benefits: '1' if at least one of the three KLD variables (environmental innovation, CSR innovation, a firm's mission is the provision of products or services for the economically disadvantaged) applies for a firm in a given year	Overall CSP index was calculated comprising all KLD strengths and concerns	Fixed and random effects panel regression (Longitudinal analysis)	Positive and significant
Russo Spena & De Chiara (2012) (International Journal of Technology Management)	Stakeholder Theory	3 multinational firms (includes footwear, toys, and office furniture industries)[a]	Innovation classified as product/service, process, or organizational innovation	3 items for CSR: CSR vision and objectives, formal CSR departments and CSR indicators	Qualitative/Multiple case study with data from secondary sources	Positive relationship; no statistical analysis or significance reported
Bocquet et al. (2013) (European Management Journal)	Resource-Based View	266 companies in Luxembourg. 2004–2006	Product innovation Process innovation (Dummy variables using Community Innovation Survey)	5 CSR practices (centrality, proactivity, volunteering, visibility and specificity) from which two types (clusters) of companies were identified (strategic and responsive CSR). Dummy variables and Likert scale (1–4)	Principal component analysis (non-hierarchical cluster analysis) and probit analysis (Cross-sectional analysis)	Strategic CSR has a positive and significant effect on product and process innovations. Responsive CSR has a negative and significant effect on process innovation
Halme & Korpela (2014) (Business Strategy and the Environment)	Resource-Based View	13 Nordic SMEs (Denmark, Norway, Sweden, Finland and Iceland). 2010–2011	Environmental and social innovation (technological and design innovation, and business model innovation)	Corporate responsibility: environmental, social and economic	Qualitative/Multiple case study with interviews and secondary data QCA method	Positive relationship; no statistical analysis or significance reported
Kozlowski et al. (2015) (Journal of Cleaner Production)	Stakeholder Theory Institutional Theory	14 apparel brands belonging to the Sustainable Apparel Coalition (SAC). Multicountry study[a]	Innovation business model: Alliances for new product and process	CSR sustainability practices integrated into supply chain, product development and sourcing strategy	Mixed-methods study using content analysis. The analysis combined frequency counts analysis	Sustainability-oriented strategies supported product and process innovation although

(Continues)

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
						no statistical analysis or significance reported
Bohas & Poussing (2016) (Journal of Cleaner Production)	Eco-Innovation	815 companies in Luxembourg. 2008 and 2010 years	Green innovation (9 items such as implemented policies, adoption of environmental innovations, adoption of information technologies, applications and remote word applications; dummy variables)	Implanting CSR policies (dummy variables 1 if a company implemented CSR policy, responsive CSR policy and 0 otherwise)	Logit analysis (Cross-sectional analysis)	In three of the five models, there is a positive and significant effect. In the other two, it is negative and significant
Lodsgård & Aagaard (2017) (Social Responsibility Journal)	Shared Value Theory	5 Denmark firms (food, insurance, bank, retail, manufacturing)[a]	Business model innovation (several items: e.g., employee innovation programs, collaborations with NGO and inclusion initiatives)	CSR initiatives and strategic actions	Qualitative/Multiple case study using semi-structured interviews and document analysis	Positive relationship; no statistical analysis or significance reported
Martinez-Conesa et al. (2017) (Journal of Cleaner Production)	Stakeholders	552 Spanish SMEs in the Region of Murcia. December 2010–February 2011	Performance in product innovation (goods or services) and in new or improved process innovation (5 items). Likert scale (1–10)	CSR actions in different items related to four types of stakeholders (suppliers, clients, employees and local community) and with environmental responsibility (multi-item scale). Likert scale (1–5)	PLS (Cross-sectional analysis)	Positive and significant Note: Innovation plays also a mediating role in the relationship between CSR and performance
Cook et al. (2019) (Journal of Business Finance & Accounting)	Stakeholders	19,622 companies on the Domini 400, Standard and Poors and SP500 indexes. 1991–2012	Number of patents, new patents and cited patents	CSR rating (strengths and concerns) in different aspects: community, diversity, labour relations, human rights, the environment, product and corporate governance	Multinomial logit model and regression analysis (Longitudinal analysis)	Positive and significant Note: Innovation plays also a mediating role in the relationship between CSR and performance
Demirel & Kesidou (2019) (Business Strategy and the Environment)	Resource-Based View Dynamic Capabilities	169 UK manufacturing firms. June–November 2010	Eco-innovation in products/services and in processes (2 dummy variables that takes value 1 if the company introduces new or improved products/services/process 0 otherwise)	Importance (high/low) of CSR policies in the company. Dummy variable	Probit analysis (Cross-sectional analysis)	There only seems to be a positive and significant effect in one of the models where the dependent variable is process eco-innovation
Sánchez-Hernández et al. (2019) (Sustainability Accounting, Management and Policy Journal)	Stakeholders	122 company managers from Guinea-Bissau and the Ivory Coast. November 2016	Innovation according to the Oslo Manual (14 items) (research and development projects, new goods and services, new practices to capture national and international markets, new	Degree of employees' and managers' knowledge of CSR (4 items), incorporating CSR in the company's strategy and communication (5 items), company response to CSR needs (economic, 12	PLS (Cross-sectional analysis)	Positive and significant Note: Innovation plays also a mediating role in the relationship between CSR and performance

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
			alliances, production or distribution improvements, information technologies development, internet presence boost, changes in the marketing area, new methods, training for staff, new business practices and new standards of production or manufacturing). Dummy variables	items; social, 14 items and environmental, 9 items). Likert scale (1–10)		
Hadj (2020) (Journal of Cleaner Production)	Neo Institutional	131 North African SMEs (Morocco, Algeria, Tunisia and Egypt)[a]	Responsible innovation with three dimensions: inclusion (1 item), anticipation (1 item) and responsiveness capacity (2 items). Likert scale (1–4)	Internal stakeholder CSR satisfaction (9 items) and external stakeholder CSR satisfaction (7 items). Likert scale (1–5)	Principal component analysis and regression analysis (Cross-sectional analysis)	Positive and significant Note: Responsible innovation plays also a mediating role in the relationship between CSR and firm competitiveness
Shahzad et al. (2020) (Journal of Cleaner Production)	Sustainability	282 Pakistani manufacturing companies. January–April 2019	Green innovation focused on the search for competitive advantage (6 items) (eco-friendly materials, material efficiency, design for recyclability, resource-saving production, reduced emissions and raw material reduction). Likert scale (1–7)	CSR activities measured from four perspectives: CSR towards the community (3 items), CSR towards the environment (4 items,) CSR towards consumers (3 items), and CSR towards employees (6 items). Likert scale (1–7)	PLS-SEM (Cross-sectional analysis)	Positive and significant
Zhou et al. (2020) (Industrial Management & Data Systems)	Resource-Based View Stakeholders	686 Chinese service companies and 1646 Chinese manufacturing companies[a]	Product or service creativity, knowledge of the market, impact in the industry and including new techniques (4 items). Likert scale (1–6)	Company managers' attitudes, corporate governance system, capacity to mitigate the adverse effects and managers' and leaders' support and participation in CSR activities (4 items). Likert scale (1–6)	PLS (Cross-sectional analysis)	Positive and significant (direct effect) Moreover, there is an indirect effect through the adoption of employee involvement and supplier collaboration
Belas et al. (2021) (Corporate Social Responsibility and Environmental Management)	Resource-Based View	1585 SMEs from the Czech Republic, Slovakia, Poland and Hungary. 2009–2020	Degree of innovation in products and services (e.g., products or services are creative, new to the market, industry-impacting, and based on new techniques). Likert scale (1–6)	CSR actions focused on customer satisfaction considering four dimensions of CSR. Likert scale (1–5)	Regression analysis (Cross-sectional analysis)	Positive and significant with two of the measures used
	Resource-Based View					

(Continues)

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
Forcadell et al. (2021) (Technological Forecasting & Social Change)		2405 Spanish manufacturing firms and 9853 observations. 2009–2016	R&D expenditures over total sales divided by the average sector R&D expenditure Product and process innovations (dummy variables that take value 1 if the firm has achieved at least one product/process innovation in the period and 0 otherwise)	Environmental CSR: Expenditures on environmental protection (value 1 when the firm has incurred expenditures related to outsourced or in-house environmental protection, maintenance or investments in environmental protection equipment, and installations related to environmental pollution control, 0 otherwise)	Tobit and probit panel data method (Longitudinal analysis)	Positive and significant
Szostak & Boughzala (2021) (Journal of Innovation Economics & Management)	Knowledge-Based View Resource-Based View Stakeholder Theory	1 French SME company Raidlight-Vertical. Sports and outdoor equipment sector. 2009–2019	Product and process innovation (the influence of the 5 operational dimensions developed by the European Commission in innovation)	CSR environmental strategy: Recycling, material reduction, and workplace well-being	Qualitative/Single case study with interviews (with founder, employees, local actors, users), direct observation, and document analysis	Positive relationship; no statistical analysis or significance reported
Turker & Ozmen (2021) (Technology in Society)	Resource-Based View	63 award-winning CSR projects from European firms from multiple sectors. 2013 year	Social Innovation classified as radical or incremental	CSR: Economic (e.g., item generation for poor people), social (e.g., inequalities reduction for disabled people) and environmental (e.g., income generation for poor people) dimensions	Qualitative/Theory-driven content analysis methodology	CSR can drive radical innovation, but only when initiatives are proactive, strategic, and address emerging sustainability challenges. Reactive or philanthropic CSR leads to incremental change; no statistical analysis or significance reported
Tsang et al. (2021) (Journal of Corporate Finance)	Stakeholders Agency	17,855 firms from 30 countries. 2004–2015	Patents and patent citations received (total patents, patent efficiency, patent value change, total citations, citation efficiency, patents per employee and citations per employee)	Dummy variable taking 1 if the CSR objectives (environment, health and safety, and sustainability) are included in the remuneration contracts of company executives this year and 0 otherwise	Regression analysis (Longitudinal analysis)	Positive and significant
Zastempowski & Cyfert (2021) (Journal of Cleaner Production)	Agency Leadership	1286 Polish SMEs. June–September 2019	Product and process innovation (dummy variables that takes value 1 if a company introduced a new product, a	CSR activities (5 items): dummy variables that takes value 1 if a company carry out initiatives and investments in more efficient infrastructure, social	Logit analysis (Cross-sectional analysis)	Positive and significant in 3 of the 5 CSR indicators

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
			new process or both and 0 otherwise)	inclusion, new products and technology, durable, resilient infrastructure, and if market financing meets its needs		
Coppola et al. (2022) (Journal of Cleaner Production)	Resource-Based View	30,769 Italian agri-food companies. 2016–2018	Product and process innovation (dummy variables that takes value 1 if a company introduced new product, service, packaging, processes to favor new markets and reduce production costs, improved production and processes, environmental management, information and communication technologies, changes in labor's organization, new alliances)	CSR strategies: dummy variables if a company carry out initiatives for collective interest, the environment, employee wellbeing and equal opportunity (22 items)	Principal component analysis and probit analysis (Cross-sectional analysis)	Positive and significant
Fontoura & Coelho (2022) (Management Decision)	Stakeholders Agency Contingency Resource Dependence	979 Portuguese energy commodity suppliers. June–December 2016	Product innovation (3 items): customized products, adapts offerings and respond new demands). Likert scale (1–7)	CSR actions: (community, environment, employees, investors, clients, suppliers). Likert scale (1–7)	Factor analysis and SEM (Cross-sectional analysis)	Positive and significant
Kuzey et al. (2022) (International Journal of Production Economics)	Upper Echelons Institutional	2259 firm-year observations from the Eikon database. 2002–2019	Eco-innovations (scale of 0–100 points on the degree of cutting-edge environmental technology and the development of eco-design processes or products)	CSR strategies (value between 0–100, integration of environmental, social and economic dimensions in daily decision-making and communicating each achievement to different stakeholders)	Fixed-effects panel regression (Longitudinal analysis)	Positive and significant
Le, Vo, & Venkatesh (2022) (Journal of Cleaner Production)	Resource-Based View Stakeholders Legitimacy	486 Vietnamese food sector SMEs. August 2021–February 2022	Green product innovation to improve the supply chain (6 items related to use environmentally materials, eco-materials for packaging, waste reduction, innovating production, energy saving and efficient waste treatment). Likert scale (1–5)	CSR actions towards internal (5 items) and external stakeholders (6 items). Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant Note: Green innovation plays also a mediating role in the relationship between CSR and green supply chain management
Padilla-Lozano & Collazzo (2022) (Competitiveness Review: An International Business Journal)	Stakeholders Organizational	325 managers from Ecuadorian manufacturing companies. 2017 year	Green product (4 items) (ecological packaging, product recycling, recycled material and recyclable materials) and process (5 items innovation) (use of	5 CSR dimensions: formal CSR tools (5 items), CSR regarding the workplace (3 items), the environment (3 items), the market	Confirmatory factor analysis and SEM (Cross-sectional analysis)	Positive and significant Note: Green innovation plays also a mediating role in the relationship between

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Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
			resources, green production system, renewable technology, environmental efficiency and guidelines), measured with a Likert scale (1–5)	(3 items) and the community (2 items). Likert scale (1–5)		CSR and competitiveness
Ureña Espaillat et al. (2022) (Corporate Social Responsibility and Environmental Management)	Knowledge	323 agri-food companies from the Dominican Republic. June–December 2020	Green innovation from four dimensions with one item each one: inclusion, anticipation, sensitivity and prevention. Likert scale (1–5)	CSR measures in two dimensions: Corporate responsibility in the agri-food business (5 items) and the environment (3 items). Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	No significant
Khan et al. (2023) (Journal of Cleaner Production)	Resource-Based View Stakeholders	357 Pakistani textile firms. April 2022–July 2022	Green innovation (7 items related to acquiring, managing and exploiting green technologies in companies). Likert scale (1–5)	CSR oriented to the environment (3 items) and CSR oriented to the community (4 items). Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant Note: Green innovation plays also a mediating role in the relationship between CSR and sustainable performance
Le, Tran, et al. (2023) (Operations Management Research)	Resource-Based View Stakeholders	458 Vietnamese SMEs from the agriculture, fishing and related sectors. July–December 2022	Green innovation (product, 4 items: harmless, recyclable inputs, energy-efficient designs, biodegradable packaging); process, 5 items: minimal resources use, eco-technologies reduce pollution, recyclable process inputs, efficient energy processes); and management, 5 items: commited to eco-rules, rebuilds green strategies, CSR systems, upgrade sustainable processes and environmental awareness). Likert scale (1–5)	CSR actions towards the environment (4 items), the community (4 items), employees (8 items) and clients (5 items). Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant
Le, Ngo, & Nguyen (2023) (European Journal of Innovation Management)	Resource-Based View Stakeholders	467 Vietnamese food and beverage sector SMEs during the post-pandemic period[a]	Business innovation (8 items) (reconfiguration models, process reorganization, partners reorganization, material circularity promotion, product redesign, fluctuation adaptation, accommodate launches and	CSR actions (8 items): compliance with ethical standards and social norms, continuous integration of stakeholder interest, employee training to foster environmental and social responsibility, development of systems for	PLS-SEM (Cross-sectional analysis)	Positive and significant

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
			exploit resources). Likert scale (1–5)	knowledge sharing, involvement of external partners in value creation, incentive policies to encourage stakeholder's participation, practical contributions to solving social issues and respect for human rights. Likert scale 1–5		
Marco-Lajara et al. (2023) (British Food Journal)	Knowledge Intellectual Capital Natural Resources Resource-Based View	202 Spanish wine-producing firms. Final quarter of 2021	Product innovation (4 items) and process innovation (4 items), measured on a Likert scale (1–7)	Study of three CSR dimensions: economic responsibility (3 items), ethical-legal (4 items) and philanthropical (4 items). Likert scale (1–7)	PLS-SEM (Cross-sectional analysis)	Positive and significant
Martos-Pedrero et al. (2023) (Corporate Social Responsibility and Environmental Management)	Stakeholders	107 Spanish exporting agri-food companies[a]	Technological and non-technological innovation from four domains: product, process, marketing and organizational. Likert scale (1–7)	CSR actions: construct with six dimensions (34 items) related to shareholders, employees, clients, farmers, community and competitors. Likert scale (1–7)	PLS (Cross-sectional analysis)	Positive and significant Note: Innovation plays also a mediating role in the relationship between CSR and export performance
Ngo & Le (2023) (Cogent Business & Management)	Stakeholders Sustainability Resource-Based View	380 Vietnamese manufacturing SMEs. 2020 year	Business model innovation (7 items). Likert scale (1–5)	CSR practices (10 items related to stakeholders, environment and society). Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant Note: Business model innovation plays also a mediating role in the relationship between CSR and performance
Riaz et al. (2023) (Journal of Competitiveness)	Resource-Based View	496 Pakistani SMEs[a]	Green innovations in products or services (4 items) and processes (4 items). Likert scale (1–5)	CSR actions related to the environmental (7 items), economic (8 items) and social (9 items) dimensions. Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant Note: Green innovation plays also a mediating role in the relationship between CSR and green competitiveness
Ripoll et al. (2023) (Journal of Cleaner Production)	Institutional	57 mining industry extraction companies from the Dominican Republic. January–June 2019	Innovation measured through four items: process, quality, organization and information. Likert scale (1–5)	3 dimensions of CSR studied: social, economic and environmental (7 items). Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant Note: Innovation plays also a mediating role in the relationship between CSR and performance

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Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
Abbas (2024) (Technological Forecasting & Social Change)	Stakeholders Dynamic Capabilities	295 manufacturing managers in Turkey. May–October 2022	Green technological innovation measured through five items with a Likert scale (1–5)	CSR actions (14 items including environmental sustainability, social welfare, ethical business practices, philanthropy, charitable). Likert scale (1–5)	Hierarchical linear regression analysis and SEM (Cross-sectional analysis)	Positive and significant
Alketbi & Ahmad (2024) (International Journal of Organizational Analysis)	Dynamic Capabilities Scarcity Economics	322 respondents in manufacturing firms in the United Arab Emirates. April–July 2022	Green product innovation and green process innovation (9 items): eco-friendly materials, biodegradable packaging, recyclable/ reusable design, resource-saving production, reduced manufacturing resources, cleaner energy technologies, material repurposing/ recycling, cuts hazardous emissions and raw material reduction. Likert scale (1–5)	Formal CSR tools, environment-, community-, workplace- and marketplace-related CSR (16 items). Likert scale (1–5)	Confirmatory factor analysis and regression analysis (Cross-sectional analysis)	Positive and significant Note: Green innovation plays also a mediating role in the relationship between CSR and sustainable practices
Chen et al. (2024) (Technology Analysis & Strategic Management)	Stakeholders Institutional	15,316 Chinese manufacturing firms. 2010–2019	Number of patents	CSR index: responsibility of shareholders, employees, suppliers, clients' and consumers' rights, environmental and social. Hexun score (0–100)	Regression analysis and instrumental variables (Longitudinal analysis)	Positive and significant
Hamdoun et al. (2024) (Journal of Intellectual Capital)	Stakeholders Resource-Based Wiew	101 Tunisian firms. 2015 year	5 items taken from the categories of innovation of the Oslo manual (OECD, 2005), i.e., product innovation, process innovation, marketing innovation, innovations in labour management and organizational innovation. Likert scale (1–5)	CSR (3 dimensions): economic, social and environmental. Likert scale (1–7)	PLS-SEM (Cross-sectional analysis)	Positive and significant (direct effect) Moreover, there is an indirect effect through structural capital
Khurshid et al. (2024) (Corporate Social Responsibility and Environmental Management)	Signalling theory	138 companies listed on the A-share market of the Karachi Stock Exchanges (Pakistan). 2011–2020	Green innovation: the company's current year patent applications	Global's CSR rating, which integrates four essential components: industry-specific, comprehensive, technical, and content-specific	Regression analysis and instrumental variables (Longitudinal analysis)	Positive and significant
Malpani et al. (2025) (International Journal of	Resource-Based View Stakeholders Social Capital	400 scaling Indian companies listed by the Department of Industrial Policy and	Innovation (4 items): sustainable product/service innovation, process and logistic, digital and	CSR (5 items: environmental sustainability practices, employee well-being, customer complaint	Confirmatory factor analysis and SEM (Cross-sectional analysis)	Positive and significant Note: Innovations plays also a mediating

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
Organizational Analysis)		Promotion (DIPP). September 2022–January 2023	information and communication technologies, organizational and management innovation. Likert scale (1–5)	resolution, honest costumer communication, community support and contributions). Likert scale (1–5)		role between CSR and financial performance
Shih (2024) (Technology Analysis & Strategic Management)	Stakeholders	230 Taiwanese technological and manufacturing firms. 2016	Innovation performance (4 items related to firm capabilities to commercialization or integrates new products, process and technologies) measured with a Likert scale (1–5)	Internal and external CSR actions and CSR focused on caring for the environment and social aspects (6 items). Likert scale (1–5)	Confirmatory factor analysis and SEM (Cross-sectional analysis)	Positive and significant Note: Innovation plays also a mediating role in the relationship between CSR and performance
Wang & Hussin (2024) (Young Consumers)	Stakeholders Opportunity Cost Innovation Diffusion Signaling	308 employees in China. March–July 2023	Items related to employees' preference for organizational green innovation (9), product innovation (7), and process innovation (3). Likert scale (1–5)	CSR performance: employee (11 items) and consumer (3 items) perception of CSR activities. Likert scale (1–7)	PLS-SEM (Cross-sectional analysis)	Positive and significant
Wu et al. (2024) (Journal of Business Ethics)	Theory of institutional isomorphism	30 provinces in China. 2011–2019.	Enterprise innovation and enterprise green innovation: the number of inventions jointly applied for by corporations in a certain period and the ratio of green invention patents to total invention patents	5 aspects of CSR): shareholder responsibility, employees' responsibility, supplier, customer and consumer rights, responsibility, environmental responsibility, and social responsibility. Hexun score (0–100)	Fixed-effects panel regression (Longitudinal analysis)	Positive and significant Note: Innovation plays also a mediating role in the relationship between CSR and urban inclusive green growth
Yasmeen & Longsheng (2024) (Journal of Cleaner Production)	Ambidexterity Resource-Based View Stakeholders	625 mineral extraction firms in China[a]	Green innovation (6 items) (minimum material during extraction, reduced extraction waste, lower resource use, low pollution materials, fewer product materials and reusable/ recyclable products). Likert scale (1–5)	CSR for the Environment (4 items), CSR for Society (3 items) and CSR for Employees (6 items). Likert scale (1–5)	Covariance based structural equation modeling (CB-SEM) (Cross-sectional analysis)	Positive and significant Note: Innovation plays also a mediating role in the relationship between CSR and sustainability performance
Cera & Ndou (2025) (European Journal of Innovation Management)	Innovation Diffusion Resource-Based View	1585 SMEs operating in Central European countries (Czech Republic, Slovakia, Poland and Hungary). 2015 year	Innovation (3 items focus on R&D and product line innovation outcomes): innovative market strategies, product and service innovation emphasis. Likert scale (1–5)	CSR (4 items): knowledge and application, competitive advantage, customer loyalty and employee engagement to CSR. Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant Note: Innovation plays also a mediating role in the relationship between CSR and business sustainability

(Continues)

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
						(in the complete sample and in the Czech and Slovak sub-samples)
Hou et al. (2025) (BRQ Business Research Quarterly)	Agency Stakeholders	5603 firm-year observations from the EU. 2012–2021	Green innovation performance measures as environmental innovation score (0–100) that focused on developing new technologies, products, services, organizational structures and management model	Alignment of management's economic remuneration with reaching CSR performance objectives (Score 0–100)	Tobit analysis and fixed-effects panel regression (Longitudinal analysis)	Positive and significant (direct effect) Moreover, there is an indirect effect through the adoption of green practices

Note: PLS denotes Partial Least Squares Regression and SEM denotes Structural Equation Model.
[a]The article does not state the period of time analysed and/or when the survey was carried out.

APPENDIX 2: Previous evidence on the effect of innovation on CSR

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
Cegarra-Navarro et al. (2016) (European Management Journal)	Resource-Based View	133 Spanish companies from the Region of Murcia participating in the "Social Pact for the Environment"[a]	Product, process, marketing, organizational and labour management innovation (5 items). Likert scale (1–5)	Social and economic dimension of CSR (3 items and 4 items, respectively). Likert scale (1–5)	PLS (Cross-sectional analysis)	Positive and significant Note: Social and economic dimensions play also a mediating role in the relationship between innovation and performance
Pedersen et al. (2018) (Journal of Business Ethics)	Stakeholders	492 managers of Swedish fashion companies. July–September 2012	Innovation of new business opportunities (9 items) (comparing existing and new products, markets, resources, processes, partners, customer tools, channels, costs and revenue). Likert scale (1–5)	CSR activities in the company related to social actions carried out by the company and care for the environment (10 items). Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant
Dey et al. (2020) (British Journal of Management)	Complementarity	119 UK SMEs[a]	Innovation oriented towards sustainability measured with a Likert scale of 1–5 (3 items, eco-design, green supply chain management and environmental organizational strategy). Likert scale (1–5)	CSR and sustainability actions (5 items, environmental, social and economic practices). Likert scale of (1–5)	SEM-Weighted Least Squares (Cross-sectional analysis)	Positive and significant Note: CSR plays also a mediating role in the relationship between innovation and performance
Awawdeh et al. (2022) (China Finance Review International)	Contingency	175 Egyptian energy companies[a]	Technological innovation: new product lines, investment in R + D, process innovation, product innovation and creation of new brand format (6 items). Likert scale (1–5)	CSR from four dimensions: economic, social, environmental and financial (22 items). Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant in the relationship between technological innovation and sustainable practices, economic factors and the implementation of sustainable practices and environmental factors and the implementation of sustainable practices. In contrast, a negative and significant effect in the relationship between social factors and sustainable practices and financial factors and the implementation of sustainable practices
Khalil et al. (2022) (China Finance Review International)	Natural Resource-Based View Stakeholders	701 publicly traded companies of 10 Asian economies. 2015–2019	Traditional innovation (R&D/total assets) and environmental innovation (environmental R&D expenditures that are targeted to	CSR strategy scores (0–100) show the companies' approach to convey that it incorporates the financial, social and environmental-related	Random effects panel regression (Longitudinal analysis)	Traditional innovation has a significant negative impact on firms' environmental performance; environmental innovation has a

(Continues)

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
			lessen the environmental burdens and costs for their consumers)	parameters into their decision-making practices		positive influence on their environmental performance
Zheng et al. (2022) (Engineering, Construction and Architectural Management)	Stakeholders Resource-Based View	75 Chinese construction companies. 2013–2017	Intensity of R + D and innovative practices carried out by the companies studied	CSR index that considers the responsibilities of shareholders, employees, suppliers, clients and consumers, environmental and social responsibilities (50 items). Hexun Score (0–100)	Regression analysis (Longitudinal analysis)	Inverted U-shaped relationship
Supeková et al. (2023) (Journal of Competitiveness)	[Information not given]	812 Slovakian SMEs. December 2020–May 2021	Corporate innovations (finances, human resources, logistics, management, marketing, process and client-supplier relationship) (7 items). Likert scale (1–5)	Concept of the environment and ethical and social concept of CSR (2 items). Likert scale (1–5)	PLS-SEM (Cross-sectional analysis)	Positive and significant
Chu et al. (2024) (Journal of Business Ethics)	Moral Licensing	2236 Chinese listed manufacturing firms (14,027 observations). 2012–2019	Green technology innovation: all invention patents, itself invention patents, all types patents	CSR index (shareholder factors, environmental protection factors, supplier-customer-consumer rights factors, and society factors)	Fixed-effects panel regression and instrumental variables (Longitudinal analysis)	Negative and significant
Culasso et al. (2025) (Business Ethics, the Environment & Responsibility)	Dynamic Capabilities	341 job postings for open innovation specialists globally. Multisectoral. January–December 2022	Total open innovation specialists	CSR conceptualized through skills related to sustainability, ethics, and social/environmental responsibility	Mixed-methods/ Latent Dirichlet Allocation using Bayesian statistics. Data scraped and pre-processed from LinkedIn	Positive relationship; no statistical analysis or significance reported
González-Ramírez et al. (2025) (European Journal of Innovation Management)	[Information not given]	98 managers of Spanish enterprises. March–May 2022	Firm innovation construct (6 items): products and services, processes, business models, technologies, organizational structures and management mechanisms innovation. Likert scale (1–5)	CSR construct (15 items grouped into the following 3 categories): social responsibility strategy, contact with stakeholders and share information with stakeholders. Likert scale (1–5)	PLS (Cross-sectional analysis)	No significant

Note: PLS denotes Partial Least Squares Regression and SEM denotes Structural Equation Model.
[a]The article does not state the period of time analysed and/or when the survey was carried out.

APPENDIX 3: Previous evidence on the bidirectional relationship between CSR and business innovation

Article	Theory/ies used	Sample and period[a]	Measure of innovation	Measure of CSR	Methodology	Sign and significance
Gallego-Álvarez et al. (2011) (Management Decision)	Resource-Based View	1000 companies from all over the world. 2003–2007	Innovation intensity: expenditure in R + D + I/total earnings	Dummy variable taking a value 1 if the company is listed on the Dow Jones Sustainability index	Logit analysis (Longitudinal analysis)	CSR → Innovation: negative and significant Innovation → CSR: negative and significant
Lai et al. (2015) (Journal of Business Research)	Stakeholders	253 Taiwanese firms[a]	R&D human resource talent (5 items) and technological innovation (4 items). Likert scale (1–7)	CSR actions in 5 dimensions: environment, stakeholders, corporate innovative capacity, CSR strategy and corporate sustainability. Likert scale (1–7)	Regression analysis (Cross-sectional analysis)	CSR → Innovation: positive and significant Innovation → CSR: not significant
Basile et al. (2022) (Management Decision)	Stakeholders Resource-Based View	500 Irani SMEs. September–December 2021	Process (3 items: technology, equipment and process changes), product (2 items: new, improved and novel goods) and social/environmental innovation (4 items: pre-pandemic innovation, crisis-driven innovation, low-impact technologies and cleaner products). Likert scale of (1–5)	CSR actions (economic −3 items, environmental −3 items, social/community −3 items, stakeholders −4 items). Likert scale of (1–5)	PLS-SEM (Cross-sectional analysis)	CSR → Innovation: positive and significant Innovation → CSR: positive and significant
Lippolis et al. (2023) (Business Strategy and the Environment)	Stakeholders Open Systems Theory	Single case study: ENEL, a major utility company in Italy. 2016–2020	Open innovation practices (e.g., innovation by vendors, co-innovation activities with suppliers, innovation hub e innovation lab, proprietary innovation and crowdsourcing platform, or internal entrepreneurship program)	Strategic CSR integrated with sustainability goals (e.g., stakeholder engagement, integration of the shared value perspective in CSR activities …)	Qualitative study/ Single case study, using semi-structured interviews and secondary data sources	Strategic CSR fosters a culture of openness that enhances open innovation; this type of innovation also supports CSR integration; no statistical analysis or significance reported

Note: PLS denotes Partial Least Squares Regression and SEM denotes Structural Equation Model.
[a]The article does not state the period of time analysed and/or when the survey was carried out.