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Does corporate governance affect M&As' impact on social and environmental performance? Evidence from Milan Stock Exchange's listed firms

Alex Almici
Renato Camodeca
Luisa Bosetti
University of Brescia, Italy

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Abstract

This study's aim is twofold: (1) to explore the effect of mergers and acquisitions (M&As) on bidders' social and environmental performance, and 2) to determine the potential drivers of this process by focusing on corporate governance characteristics. The analysis is based on M&As performed by firms listed on the Milan Italian Stock Exchange during the 5-year period of 2018–2022. The research data were retrieved from the FactSet and Refinitiv Eikon databases and examined using regression analyses. The findings demonstrate that M&As positively affect social and environmental performance, as long as good corporate governance practices are in place. The current research draws on stakeholder-agency theory and identifies the potential drivers of the value creation process in the M&A context enhancing the limited existing literature on this topic. The findings highlight the role of corporate governance in strengthening the impact of M&As on bidders' non-financial performance, offering valuable practical implications. First, investors and financial analysts should develop a comprehensive perspective to assess the M&A's impact on non-financial performance. Second, regulators should consider strengthening specific corporate governance requirements. Finally, policymakers should encourage M&As undertaken by firms with sustainability-oriented boards of directors.

Keywords: Corporate governance, M&As, social and environmental performance, stakeholder-agency theory

Introduction

The study of mergers and acquisitions' (M&As') impacts on firms' performance has been widely addressed by scholars, focusing on the economic dimension and with mixed results [Alexandridis et al., (2013); Dunn et al., (2016); Lilien et al., (2020)]. Some scholars have underlined how management often implements these operations to achieve personal goals, undertaking opportunistic behaviors aimed at either exploiting an increase in a firm's size (empire building) or reducing control over its activities. According to this perspective, M&As have been identified as value-destroying operations mainly driven by management's selfish economic goals and negatively affected by entrenchment and earnings management [Berge et al., (1997); Masulis et al., (2007); Teti et al., (2017)].

Given that much of the literature has depicted these operations as a tool for pursuing management's interests, with negative impacts on other stakeholders, it is important to understand the impact of these strategic operations on environmental and social performance.

The analysis of the relationships between these transactions, sustainability and social and environmental performance has received limited attention, providing mixed results with regard to potential drivers. Despite its growing importance, this topic remains relatively understudied.

The need to promote further research is emphasized by the increasing economic relevance of these transactions: in 2022, 57,736 M&As were completed for a total value of US$ 3,342 billion [PWC, (2023)]. M&A's transactions are high-impact strategic operations, as they can have disruptive effects on the stakeholders' wealth, by implying a wide reorganization of firms.

Although the mainstream literature identifies an M&As' positive contribution to value creation for stakeholders, research attention to this topic has still been limited, in particular with reference to the drivers enabling these transactions to enhance the social and environmental performance.

The literature has only recently addressed the M&As' issue from this perspective, and has focused on the assessment of the potential improvement of non-financial performance, while the key-variables driving such processes and the factors determining a deal's success have yet to be explored [Fatemi et al., (2017); Tampakoudis & Anagnostopoulou, (2020); Vastola & Russo, (2021); Mihaiu et al., (2021); Caiazza et al., (2021); Barros et al., (2022); Huang et al., (2023); Rahman & Wu, (2023)]. Considering the research gap,

this study's aim is twofold: (1) to fill the research gap by verifying whether M&As positively affect social and environmental performance, and (2) to determine whether the M&A's effects on the acquirer's social and environmental performance can be explained by considering specific corporate governance characteristics as driving factors.

M&As underline some typical agency problems, such as misalignment between management and stakeholders interests, information asymmetry, a strong need to monitor management activity, and management's tendency to undertake opportunistic behaviors. Hence, this study draws on the stakeholder-agency framework [Hill & Jones, (1992)], assuming that corporate governance mechanisms may facilitate the alignment between management and all stakeholders' interests in the M&A context [Asni & Agustia, (2022); Salvioni & Almici, (2022); Almici, (2023)]. This study is grounded on an interdependent perspective of stakeholder theory, assuming that stakeholders are intertwined and value creation in the long-run is allowed by the fulfillment of their expectations. The management's economic interests and the stakeholders' social and environmental interests can be aligned by effective governance mechanisms, enabling consistency between corporate governance bodies' decisions, business models and achieved results. According to this theoretical perspective, M&A transactions can potentially enable the fulfillment of management's, shareholders' and other stakeholders' interests, holding non-economic expectations.

According to this framework, this study aims to verify whether (1) M&As positively affect social and environmental performance, and (2) the bidder's corporate governance characteristics have a positive impact on this process.

To test the aforementioned hypotheses, the analysis focused on M&As carried out by firms listed on the Milan Stock Exchange during the 5-year period of 2018–2022. The study used a regression analysis based on data retrieved from the Eikon Refinitiv and FactSet databases by focusing on ESG scores as a proxy for social and environmental performance and specific corporate governance features.

The decision to focus the analysis on Milan Stock Exchange–listed companies aims at filling a research gap, as attention has mainly been given to other countries, particularly those characterized by a highly developed M&A market, such as the United States of America [Hassan et al., (2007); Masulis et al., (2007); Teti et al., (2017)]. In addition, the analysis of Italian firms allows us to address this issue with reference to a typical corporate governance insider model.

The main contributions of this study are as follows: adoption of a multidimensional perspective linking M&As, corporate governance, and

social and environmental performance; enhancement of the extant literature regarding the M&As' contribution to social and environmental performance by strengthening firms' sustainability orientation; use of the stakeholder-agency theory approach by selecting specific corporate governance features—beyond those traditionally studied—to explain the drivers enabling M&As to create value in the long run; and a focus on the post-merger effects on social and environmental performance rather than the impacts of ESG performance on M&As' success. The research findings show that M&As may positively affect both social and environmental performance, creating value for stakeholders. In addition, specific corporate governance characteristics facilitate M&As' enhancement of non-economic results, satisfy social and environmental expectations, and discourage management's opportunistic behaviors. This is a new perspective that addresses the value-creation issue by linking M&As, social and environmental performance, and corporate governance, according to the interdependent view of stakeholder-agency theory. These findings will be of interest to investors, financial analysts, policy makers and regulators, as they underline how stakeholders can benefit from external growth strategies that are typically seen as driven by economic interests as long as firms have the best corporate governance practices in place.

The remainder of the paper is structured as follows. Sections 2 and 3 present the literature review. Section 4 discusses the theoretical framework and the research hypotheses. Section 5 explains the methodology and data collection, while Section 6 discusses the main results. The last one – Section 7 - is dedicated to conclusions.

The effect of M&As on non-financial performance

M&A transactions are based on strategic decisions that strongly impact the firm's life cycle and performance producing disruptive effects, and significant changes in the bidder's structure. M&As are driven by various motivations, including the following: to expand the firm's presence in primary or secondary markets and new geographical areas, to develop synergies with other firms, to acquire new competencies, to obtain competitors' technological assets, to grow faster than internal growth allows, and to increase efficiency and competitiveness through economies of scale [Eulerich et al., (2022); Vinocour et al., (2022); Darayseh & Alsharari, (2023)]. Darayseh & Alsharari (2023) focused on the banking sector and, identified the main factors leading to successful M&As, with regard to income, growth, costs, survival, diversification, security, and risk.

Although the abovementioned determinants are recognized as being distinctive of these strategic operations, part of the literature has seen M&As as tools for achieving opportunistic goals, referring to management's selfish

interests, with negative effects on the value-creation process [King et al., (2004); Dunn et al., (2016); Lilien et al., (2020); Amano, (2022)]. This topic has been investigated by focusing mainly on shareholders and on the economic effects in terms of abnormal returns for shareholders by highlighting results that are mixed and far from conclusive [Renneboog & Vansteenkiste, (2019); Lilien et al., (2020); Ahmed et al., (2023)].

Little attention has been given to the analysis of M&As' effects on non-economic performance (in particular, socio-environmental performance).

Some scholars have investigated the effects of non-financial performance on specific aspects related to M&As, such as the cross-border M&As' business efficiency and diversification discount [Byoung-jin, (2021)]; the relationship between the pre-deal target's and acquirer's sustainability and deal timing [Cardillo & Murad, (2023); Ma, (2023)]; the impact of differences between acquirer and target countries in terms of environmental sustainability, and the intensity of cross-border mergers [Ahmad et al., (2023)]; the link between differences in ESG performance and time to completion (TTC), consisting of the number of days between the announcement and closing of a deal [Just et al., (2023)]; and the negative effects of the size of green M&A listed companies on the development of the rural ecological environment [Zhou et al., (2023)].

The academic literature has mainly focused on the analysis of the effects on M&As' performance generated by sustainability identified as an independent variable, by neglecting, the inverse perspective related to M&As' impacts on sustainability.

In this regard, [Teti et al. (2022)] focused on the analysis of the effects of each of the ESG pillar on takeover performance; they observed that – on a stand-alone basis – the governance system positively affects the achieved results, unlike social and environmental systems that are not relevant for M&A's value creation. Zrigui et al. (2024) investigated the impact of ESG performance on the valuation of M&A transactions, demonstrating that social and environmental aspects drove the acquisition premium while the governance dimension did not appear to be relevant.

A clear gap exists that is related to the opportunity to explore the effects of these strategic transactions on the environmental and social performance.

Only recently have some scholars focused on M&As' social and environmental impacts by proxying non-financial performance using ESG scores [Aktas et al., (2011); Tampakoudis & Anagnostopoulou, (2020); Kim et al., (2021); Caiazza et al., (2021); Barros et al., (2022); Rahman and Wu, (2023)]. This perspective aims to explain whether these operations can

contribute to value creation for stakeholders by focusing on the social and environmental dimensions as identifying the typical pillars of sustainability.

Although, the studies are limited and findings are—moreover—mixed, a clear prevalence of evidence demonstrates the improvement in performance after M&As [Yen and André, (2019); Tampakoudis & Anagnostopoulou, (2020); Vastola and Russo, (2021); Mihaiu et al., (2021); Barros et al., (2022); Li & Wang, (2023)].

Fatemi et al. (2017) found that mergers have no effect on the ESG performance of the acquirer in the long run, while a study by Aktas et al. (2011) revealed that the acquirer's social and environmental performance and financial gains improved after a M&A in which the target firm was SRI-aware. Similarly, Tampakoudis & Anagnostopoulou (2020), who examined 100 M&As completed by European Union firms during 2003–2016, discovered that the acquirer's ESG performance increased after an M&A transaction with a target firm whose pre-merger ESG performance was higher than the acquirer's ESG performance. Considering a sample of 3,941 deals completed in 41 countries and 12 economic sectors from 2002 to 2020, Barros et al. (2022) assessed the implications of M&As on bidder's sustainability, showing that the acquirer's global ESG score, environmental score, and social score improved in the year following the M&A. Mihaiu et al. (2021) analyzed 100 leading pharmaceutical companies between 2010 and 2020 and found a positive relationship between M&A transactions and firms' non-financial performance, which improved during the selected period. Rahman & Wu (2023) investigated the M&As' impacts on firms' environmental, social and governance performance, by analyzing 128 Chinese listed companies that have completed at least one M&A between 2011 and 2020. The results demonstrate how the acquisition of a target with high ESG scores contributes to the improvement of the acquirer's non-financial performance. With regard to the M&A's non-economic effects, Kim et al. (2021) observed how M&As improve environmental performance, by facilitating an increase in the number of green patent applications, while Caiazza et al. (2021) identified - by investigating deals completed between 2000 and 2019 in the U.S. - a positive correlation between M&As' long-term effects and firm's sustainability performance.

Employing a qualitative research method based on both semi-structured interviews with senior executives of worldwide companies and secondary data, Vastola & Russo (2021) explored the effects of M&As on acquirers' sustainability orientation, highlighting three main outcomes in terms of the acquirer's sustainability: significant advancement ("embedding sustainability"), slight improvement ("adding sustainability"), and decrease ("losing sustainability").

Conversely, other scholars have found a worsening of non-financial performance after M&As, although in the presence of extraordinary situations of a widespread world-scale crisis. For example, Tampakoudis et al. (2021) analyzed a sample of 889 completed M&As announced by US firms between January 1, 2018, and July 31, 2020 (during the COVID-19 pandemic) by highlighting a significant negative value effect of ESG performance for the acquirer's shareholders.

Studies on M&As' effects on non-financial performance are limited and provide mixed results. There is a need for further analysis to understand whether and to what extent these strategic decisions are made according to social and environmental stakeholders' expectations.

In this regard, the extant literature underlines the need to understand these strategic operations' impacts on the fulfillment of social and environmental expectations, according to a stakeholder-agency perspective.

The impact of corporate governance on mergers and acquisitions

M&As have been identified in the literature as specific investments implying agency costs and as a consequence of the traditional conflict between management's and stakeholders' interests. Several studies have addressed the M&A topic according to the corporate governance perspective by verifying the presence of potential relationships between specific corporate governance features and these strategic operations, without achieving shared results [Starks and Wei, (2013); Andriosopoulos et al., (2016); Ellis et al. (2017); Teti et al., (2017); Teti et al., (2022); de Sousa Barros et al., (2021)].

In this regard, Andriosopoulos et al. (2016) found that the presence of institutional investors in the acquirer's shareholding structure positively affected M&A performance. With reference to the impacts on bid premiums, Stulz (1998) observed that the voting power of the target's largest shareholders affected the acquirer's tendency to increase the bid price. Gaspar et al. (2005) demonstrated that targets with dominant short-term shareholders are likely to get lower bid premiums.

More generally, it has been observed that the higher quality of the bidder's corporate governance than the target's corporate governance usually implies higher cumulative abnormal returns for the bidder [Starks and Wei, (2013); Ellis et al., (2017); Hussain and Loureiro, (2022)]. Some authors have observed how the high number of executive directors, together with the Chief Executive Officer (CEO) duality, facilitates deals carried out according to the exclusive management's interests, which are usually affected by management's orientation of overestimating its capabilities and thinking that target companies are undervalued because they are not well managed (the so-

called "hubris hypothesis") [Roll, (1986); Hayward & Hambrick, (1997); Malmendier & Tate, (2008); Redor, (2016)].

In particular, the literature has observed how the high incidence of non-executive directors reduces the risk of behaviors driven by the so-called "hubris effect" and orients M&As toward all stakeholders' wealth according to sustainability, equity, transparency, and global responsibility principles.

More generally, Teti et al. (2017) found that board independence, CEO duality, and the level of CEO fixed compensation positively affect the economic results of an acquisition by generating value for bidders. Similarly, Tampakoudis et al. (2018) observed that board size was negatively related to the abnormal returns of the announcement period, while high shareholders' voting rights showed a positive effect.

With specific reference to the above-stated corporate governance features, other studies have verified the presence of a relationship between these features and post-M&A bidder's performance by highlighting the results. Indeed, on the one hand, several studies have underlined that firms with a high proportion of independent board members achieve better results when M&As take place, improving the acquirers' share performance [Ben Amar et al., (2011); Chadam, (2018); Defrancq et al., (2021)]. On the other hand, some scholars have demonstrated that either board independence has no significant impact on abnormal acquirer's returns [Garcia & Herrero, (2022)] or a negative relationship exists [Faleye et al., (2011); Baldenius et al., (2014)].

As concerns CEO duality, the results are far from conclusive, as the evidence is mixed and highlights different perspectives. The majority of studies have demonstrated how this corporate governance feature might lead to wealth destroying M&As, thereby confirming the entrenchment hypothesis stated by agency theory [Masulis et al. (2007); Goranova et al., (2010)]. By contrast, organization theory highlights that stronger and quicker decision-making—facilitated by CEO duality—is a desirable attribute in the case of M&As [(Baliga et al., (1996)]. Other studies demonstrated that the relationship between CEO duality and acquirer's value creation is either not significant [Chadam, (2018); Defrancq, (2021)] or positive in terms of acquirer's returns [Garcia & Herrero, (2022); Tampakoudis et al., (2022)].

With reference to the CEOs' compensation issue, some authors have investigated the relationship between executive compensation and M&A deals. For example, based on evidence that larger companies pay higher salaries to their managers and that the stronger reputation of these latter provides them with greater remuneration, Xue et al. (2020) argued that top executives may be tempted to undertake M&A transactions to expand firm size (the "empire building" phenomenon).

Other studies have investigated the corporate governance system's effects by focusing on other characteristics, such as the level and distribution of board ownership, board size, and block-holder control. According to Carline et al. (2009), these characteristics show a statistically significant impact on the economic performance of acquirers by demonstrating that the board's direct stock ownership identifies an incentive for making strategic decisions in the firm's interest. Large outside block holdings positively affect mergers' operating performance, and board size has a negative effect on the bidder's post-merger performance. With specific reference to board size, the mainstream literature has underlined the presence of a negative relationship between large boards and acquirer performance, arguing that large boards tend to be slow to take bureaucratic decision processes, which hamper their ability to monitor management [Teti et al., (2017)]. Hence, small boards should be preferred because they can more effectively fulfill their advisory and supervisory roles over CEOs, thanks to higher cohesion, greater coordination, and better communication [Jensen, (1993); Khorana et al., (2007); Tampakoudis et al., (2018)].

However, the results are mixed, as some authors argue that large boards can positively affect an acquirer's performance [Bauguess & Stegemoller, (2008); Ghosh & Dutta, (2018); Tampakoudis et al., (2022)], while other scholars have identified no significant relationship between board size and M&A returns [Masulis et al., (2012); Defrancq et al., (2021)].

As regards the corporate governance characteristics selected for assessing the impacts on post-merger performance, the literature has also focused on gender diversity. In this regard, Defrancq et al. (2021) concluded that female directors play a key role in preventing the value-destroying operations initiated by management and contribute to creating value for the acquirer's shareholders. According to Levi et al. (2014) companies with higher percentages of female directors engage in fewer acquisitions and, when M&As are implemented, pay lower takeover premiums. With reference to the US S&P 1,500 firms in the period 1998–2010, Chen et al. (2016) observed that firms with higher gender diversity on the board carry out fewer and smaller M&A transactions. Nonetheless, a study by Huang & Kisgen (2013) demonstrated that female managers implement more profitable acquisitions than men.

Only a few studies have conducted a broader analysis by integrating into the investigation of the relationship between M&As and corporate governance, the related effects on ESG performance. Taglialatela et al. (2022) demonstrated how specific blockholders' characteristics positively affect the social and environmental performance of M&A target firms. Similarly, Zheng et al. (2021) demonstrated how the M&As can be useful for improving environmental sustainability, due to the mediating effect of

corporate governance. Kapil & Kumar (2023) investigated the relationship between corporate governance characteristics and firms' sustainability performance, focusing on Indian acquires. The findings underlined a positive association between institutional and foreign ownership and sustainability performance.

Thus, the aforementioned studies underline the presence – in the M&As' context – of a relationship between the corporate governance system and ESG performance, by highlighting the need to examine this topic in depth and fill the gap in the existing literature.

Indeed, the analysis of the literature underlines how existing studies have used the corporate governance approach to explain M&As' effects according to two main perspectives: focusing on economic performance rather than socio-environmental performance and neglecting the main implications of corporate governance features in terms of sustainability orientation. This study aims to contribute to the existing literature by analyzing the relationships between M&As and stakeholders' social and environmental expectations, as affected by specific corporate governance characteristics overcoming the traditional agency problem.

Theoretical framework and hypothesis development

M&As have been seen by some authors as strategic tools used by management to pursue selfish economic interests by exploiting information asymmetry between the involved parties. In this regard, the literature has underlined how M&As emphasize the traditional misalignment between management's and shareholders' interests by recalling the so-called "agency problem" [Jensen and Meckling, (1976)]. This issue relates to managers' opportunistic behaviors in exploiting their information advantage over shareholders (principals), who must bear the costs of monitoring CEOs' activities.

Some studies have been conducted to understand the specific reasons for management's opportunistic behavior in the M&A context. The literature has underlined how managers prefer to keep financial resources available by discouraging the distribution of cash to shareholders to avoid controls from external agents, which typically occur in the case of external sources of financing. Other studies have observed how bad deals usually relate to management's efforts to increase its compensation, especially when it is based on the firm's size, which—after the M&A—is likely to increase [Stulz, (1990); Trautwein, (1990); Khorana and Zenner, (1998); Grinstein and Hribar, (2004); Harford and Li, (2007)].

However, the increasing diffusion of CSR and sustainability principles has boosted the idea that firms should consider not only shareholders' economic expectations but also all stakeholders' expectations

(economic and non-economic). According to this belief, a broader approach than the classical "agency-theory" framework has been established, known as the "stakeholder-agency theory," that states that all stakeholders—not just the shareholders—have legitimate claims toward their firms [Hill & Jones, (1992)].

In particular, this research is grounded on a modern and interdependent view of stakeholder theory implying that the value creation over the long-run depends on the ability of a firm to fulfill all relevant and intertwined stakeholders' expectations.

However, the implementation of such a process requires the development of specific governance mechanisms aimed at ensuring a trade-off between the management goals and the achievement of results consistent with all relevant stakeholders' expectations (economic and non-economic).

This framework expands the number of relevant actors by promoting integration between shareholders and stakeholders, whose interests should be protected by management's activities according to a specific agency mandate. In this regard, stakeholder-agency theory underlines a shift in perspective from shareholder supremacy toward a stakeholder perspective, which should orient any strategic decisions affecting a firm's performance over the long run. Thus, the M&A issue can be framed within this theoretical framework by highlighting the need to implement specific tools for monitoring CEOs' activities to ensure the achievement of strategic goals for the wealth of all stakeholders by avoiding value-destroying deals aimed exclusively at reaching CEO's interests [Masulis et al., 2007; Teti et al., (2017)]. This approach provides a different view compared to the existing literature, according to a revised perspective of traditional stakeholder theory and agency theory, to identify a potential driver of the value-creation process launched by M&As. The academic literature has not identified the factors enabling the enhancement of post-merger social and environmental performance, rather it has focused on the effects of the target's ESG performance by neglecting the potential relationships with the corporate governance system, and the implications that M&As generate in terms of social and environmental expectations and agency costs.

Indeed, managers' decisions are negatively affected by the so-called "managerial entrenchment," that is, "the extent to which managers fail to experience discipline from the full range of corporate governance and control mechanisms including board monitoring, market control, and compensation related to company performance" [Berger et al., (1997)]. In this regard, several studies have underlined that in the case of M&As, management usually takes opportunistic behaviors and misbehaviors generally aimed at safeguarding their economic interests by neglecting non-economic stakeholders' expectations and performing value-destroying deals [Grinstein

and Hribar, (2004); Harford and Li, (2007); Teti et al., (2017)]. To avoid value-destroying M&As, the literature has underlined the relevant role played by the board of directors, which is formally in charge of making strategic decisions and monitoring CEOs' activities [E-Vahdati et al., 2019; Naciti, 2019; Salvioni and Almici, (2022)].

In this regard, the literature has underlined how the corporate governance system's orientation toward sustainability is facilitated by a board of directors complying with specific requirements, facilitating the convergence of traditionally conflicting interests by overcoming the misalignment between management and stakeholders and reducing related agency costs.

According to stakeholder-agency theory, this study aims to verify whether M&As contribute to value creation by enhancing social and environmental performance or should be systematically interpreted either as management tools for performing opportunistic behaviors or for enhancing only the economic performance. Hence, this study aims to contribute to the existing literature, which—in terms of M&As' impacts on non-financial performance—has developed only recently and, without fully accepted results. In addition, this study aims to address this topic by focusing on the explanatory variables of this relationship, according to the corporate governance perspective, which is normally used to investigate only economic effects.

To reach the above-stated goal, two general hypotheses were formulated (H1 and H2), related to impacts on social and environmental performance:

H1: M&As positively affect the bidder's social performance

H2: M&As positively affect the bidder's environmental performance

To identify potential variables affecting the relationship between M&As and social and environmental performance, this study aimed to verify the following third hypothesis (H3):

H3: The acquirer's corporate governance mechanisms positively impact H1 and H2

H3 was tested with reference to specific corporate governance characteristics that are considered enablers of the convergence of involved interests (both economic and non-economic) by mitigating the agency problem effects.

Hence, this study focuses on the corporate governance features that have been selected by the mainstream literature to explain M&As' performance (especially the economic one) [Berger et al., (1997); Masulis et

al., (2007); Teti et al., (2017); Tampakoudis et al., (2018)]. It adds new variables to previous studies affecting social and environmental performance according to a sustainability-based perspective.

In particular, H3 was tested according to the following corporate governance variables.

1. Board size

   The extant literature has analyzed the potential impacts of board size on an acquirer's post-merger economic performance with mixed results. The main findings are presented in Section 3.

However, the relationship between board size and social and environmental performance in connection with M&As is understudied, highlighting a gap in the research.

2. Board's gender diversity

Many studies have demonstrated a positive relationship between the presence of female directors and the enhancement of firms' sustainability orientation. These findings are explained in Section 3.

However, no studies have investigated the relationship between gender diversity and post-M&A's social and environmental performance.

3. The presence of non-executive board members

Through their oversight function, non-executive directors discourage and prevent the opportunistic behavior of CEOs and other managers, thus ensuring that all corporate decisions and actions are implemented in the interests of shareholders and other stakeholders [Johnson et al., (1996); Redor, (2016); Mayur & Saravanan, (2017)].

In this regard, although many studies have examined the relationship between the presence of non-executive directors and sustainability [Zhang et al., (2013); Sundarasen et al., (2016); Grishunin et al., (2022)], the literature has not yet clearly explained how this relationship works in the M&A context.

4. Board independence

The literature has underlined how a high number of independent directors strengthens the effectiveness of control over management activity by facilitating the fulfillment of all stakeholders' expectations (both economic and non-economic) [Fama & Jensen, (1983); Zattoni & Cuomo, (2010); Defrancq, (2021)].

Apart from one study by Kapil & Kumar (2023), which demonstrated a positive relationship between the proportion of Indian bidders, the effects

of board independence on corporate sustainability in M&A operations have remained almost unexplored.

5. CEO separation

CEO separation occurs when the CEO of a company does not serve as the chairperson of the board. From the perspective of agency theory, CEO separation increases corporate governance effectiveness because it strengthens board oversight [Morck et al., (1989); Endrikat et al., (2021)] and avoids CEO entrenchment [Elyasiani et al., (2015); Teti et al., (2017)].

Prior studies have also explored the effects of CEO duality on firms' sustainability performance but not in the context of M&As. The above-stated points underline the need to investigate the relationship between CEO separation and post-M&A non-financial performance.

6. Sustainability into CEOs' compensation

The integration of sustainability into CEOs' remuneration can facilitate overcoming the agency problem by stimulating convergence between traditionally conflicting interests. In this regard, the literature has underlined—even with controversial results—the presence of a positive relationship between sustainability integration into CEOs' compensation and social and environmental performance [Thorne et al., (2010); Callan and Thomas, (2011); Hong et al., (2016); Almici, (2023)].

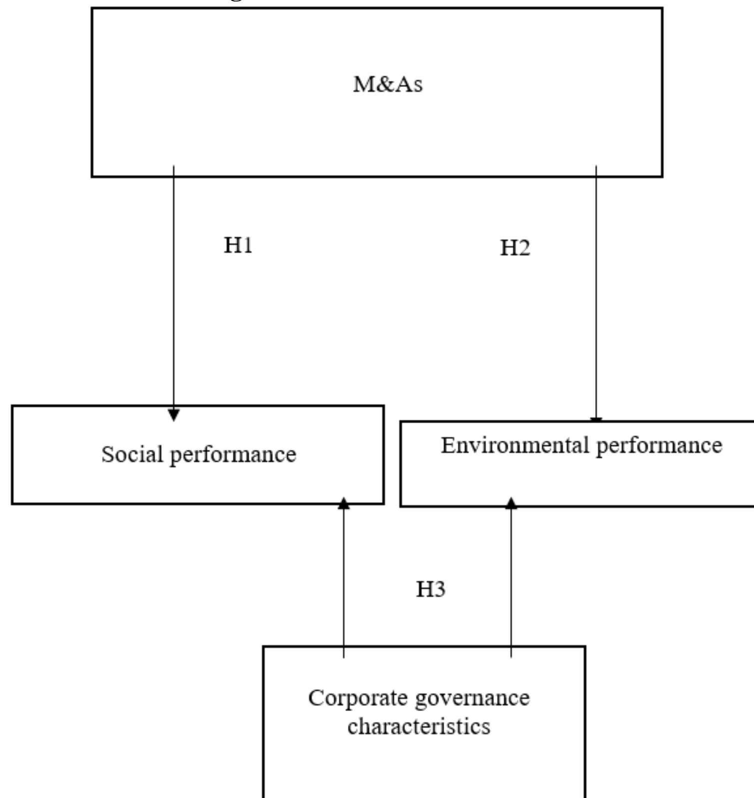
Conversely, the above-stated relationship has not been investigated in the M&As' context.

7. Establishment of the sustainability committee

The majority of scholars have observed how the establishment of a sustainability committee promotes a focus on all stakeholders by identifying a specific body dedicated to social and environmental issues. [(Gennari and Salvioni, (2019); García-Sanchez et al., (2019); Endrikat et al., (2021)]. In this regard, this body may affect the post-M&A bidder's non-financial performance, as it mainly targets social and environmental issues; however, researchers have neglected to analyze the role played by sustainability committees within the M&A context.

The above-stated hypotheses are depicted in Figure 1.

Fig. 1 The theoretical framework



Research design

Sample description

The analysis is focused on Milan Stock Exchange–listed companies on December 31, 2022, performing M&As over the five-year period from January 1, 2018 to December 31, 2022, considering the high relevance assumed by the sustainability issue in this period. Indeed, several initiatives have been promoted in the selected period (i.e., the European Regulation No. 2088/2019 about sustainable finance disclosure, the European Green Deal presented by the European Commission in 2019, the European Regulation No. 852/2020 about the taxonomy of sustainable economic activities, the European Recovery Plan in 2020, and the Corporate Sustainability Reporting Directive No. 2464/2022), highlighting the increasing relevance of the social and environmental dimension. The decision to focus on the Italian context rather than any other countries aims at filling a specific research gap, as the analysis of this topic has generally involved other countries, especially those notoriously characterized by a highly developed M&A market (i.e., the United States) [Hassan et al., (2007); Masulis et al., (2007); Teti et al., (2017)], and Europe in general [Tampakoudis et al., (2018)] by neglecting the Italian context. In particular, the focus on Milan Stock Exchange–listed

companies allows consideration of the related corporate governance system's specificity, mainly in terms of control activities, which are in charge of specific bodies—as typically in insider systems—rather than of the market.

The selected sample includes 124 firms from the 517 listed on the Milan Stock Exchange that performed 340 M&As between 2018 and 2022; deals were selected using the FactSet database. In particular, the deals included in the sample fulfilled the following requirements:

- The bidders are listed on the Milan Stock Exchange, with headquarters either in Italy or in the rest of the world.
- The targets are both listed and non-listed, with headquarters either in Italy or in other countries.
- Only mergers and acquisitions have been considered.
- M&As are completed and not only announced.
- All industries are analyzed, including financial, because even this industry is specifically regulated,in the last few years, financial firms have shown an increasing interest in social and environmental issues [Sobhani et al., (2012); Chew et al., (2016); Matuszak & Rozanska, (2020)].
- The bidders are ESG ranked in the Eikon Refinitiv database.

The industry classification of the 124 selected bidders refers to the Global Industry Classification Standard; Table 1 shows how the information technology (IT) industry is characterized by the highest acquirers' concentration (around 12%), while other industries show a fragmented distribution of the selected firms (between 0.81% and 4.84% for each industry). This finding is aligned with international evidence about the increasing number of M&As in the IT industry facing the challenges imposed by the digital transformation process and the new strategic needs induced by innovation [KPMG, (2021)]. Similarly, most of the targets belong to the IT industry (around 19%), followed by machinery and consumer discretionary industries.

With reference to geographical distribution, bidders have headquarters in Italy (only 5.6% of the sample consists of firms located in other European countries). In contrast, the share of firms with headquarters in foreign countries increases with regard to targets, with 37% located outside Italian boundaries (specifically 20% in Europe, 4% in Australia, and the remaining 13% in America). The above-described geographical distribution is also confirmed in terms of performed deals (Table 2): 37% consist of cross-border deals demonstrating firms' goals to expand geographically, while the remaining (67%) consist of domestic M&As. In addition, Table 2 shows how most deals are concentrated in 2018–2020

(around 68%); this period is also characterized by the highest share in terms of value deals, which equals 91% of the total value.

Table 1: Industry and geographical distribution of the sample

Industry	**No of bidders**	Italy	Europe	**No. of targets**	Italy	Europe	Australia	America
Household and personal products	**2**	2		**7**	5	1		1
Industrial conglomerate	**3**	3		**4**	3	1		
Consumer discretionary	**4**	4		**25**	20	4		1
Chemicals	**3**	3		**4**	1	2		1
Healthcare providers and services	**4**	4		**16**	12	2	1	1
Transportation Infrastructure	**4**	2	**2**	**5**	4			1
Financial services	**5**	5		**16**	13	1		2
Banks	**5**	5		**13**	13			
Construction & Engineering	**5**	4	**1**	**7**	2	4		1
Beverages	**3**	3		**6**	2	2	1	1
Machinery	**4**	4		**32**	20	7		5
Healthcare equipment & suplliers	**5**	5		**7**	3	1	1	2
Electric utilities	**5**	5		**10**	5	3		2
Oil, Gas & Consumable Fuels	**2**	2		**2**	2			
Automobiles	**5**	3	2	**3**		1		2
Diversified Telecommunication Services	**3**	3		**3**	2	1		
Gas utilities	**5**	5		**12**	10	1	1	
Multiutilities	**6**	6		**16**	8	5		3
Aerospace & Defence	**2**	2		**3**	1	1		1
Textiles, Apparel & Luxury Goods	**4**	4		**3**	3			
IT Services	**15**	14	1	**64**	37	13	10	4
Auto components	**3**	3		**3**	1	1		1
Insurance	**5**	5		**17**	10	7		
Electrical equipment	**6**	6		**14**	9	3		2
Pharmaceuticals	**3**	3		**4**	2	2		
Energy equipment and services	**2**	1	1	**1**				1
Semiconductors &semiconductor equipment	**1**	1		**1**		1		

Commercial services and supplies	**2**	2		**14**	9	2		3
Households durable	**1**	1		**2**	2			
Building products	**4**	4		**11**	7	1		3
Media entairtainment	**3**	3		**15**	9	2		4
Total	**124**	117	7	**340**	215	69	14	42

Table 2: Deals' characteristics

Year	Number of M&A	Deal value (mln/€)	Domestic deal	Cross-border deal
2018	74	36.142,64	45	29
2019	84	29.439,40	56	28
2020	73	10.574,72	51	22
2021	67	6.026,99	36	30
2022	42	1.585,75	27	16
Total	340	83.769,50	215	125

Empirical model and variable measurement

Hypotheses 1, and 2 were tested by calculating the change in ESG performance—distinguishing between social, and environmental performance—before and after the M&A, as stated in Section 5.3.

Social and environmental performance are proxied by social and environmental pillars' score retrieved from Eikon Refinitiv database.

Hypothesis 3 was tested using multivariate statistical analysis, employing the following multiple regression models:

$$Social_performance_change_{it} = ß_0 + ß_1 BoD_Size_{it} + ß_2 BoD_Gend_{it} + ß_3 BoD_NED_{it} + ß_4 BoD_Ind_{it} + ß_5 Ceo\text{-}Chair_{it} + ß_6 BoD_Sust_Rem_{it} + ß_7 Sust_Com_{it} + ß_8 Size_{it} + ß_9 Leverage_{it} + \varepsilon_{it}. \text{ (Model 1)}$$

$$Environ_performance_change_{it} = ß_0 + ß_1 BoD_Size_{it} + ß_2 BoD_Gend_{it} + ß_3 BoD_NED_{it} + ß_4 BoD_Ind_{it} + ß_5 Ceo\text{-}Chair_{it} + ß_6 BoD_Sust_Rem_{it} + ß_7 Sust_Com_{it} + ß_8 Size_{it} + ß_9 Leverage_{it} + \varepsilon_{it}. \text{ (Model 2)}$$

The above-stated models refer to the social scores' change (Model 1), and environmental scores' change (Model 2) of firm i at period t by assuming that these changes are functions of specific corporate governance characteristics, other control variables, and error ε.

The models' variables are described in Table 3.

Table 3: Variables' description

Variables	Symbols	Descriptions
Change in bidder's Social performance	Social_performance_change	Change in Acquirer's social performance before (announcement date) and after (closing date) the M&A
Change in bidder's Environmental performance	Environmental_performance_change	Change in Acquirer's environmental performance before (announcement date) and after (closing date) the M&A
Board size	BoD_Size	Natural logarithm of the number of board members
Board gender diversity	BoD_Gend	Percentage of female directors on board
Non-executives board members	BoD_NED	Percentage of non-executive directors on board
Board independence	BoD_Ind	Percentage of independent directors on board
CEO-Chair separation	CEO-Chair	Dummy variable that equals 1 if the CEO and Chair are not the same person and 0 otherwise
Sustainability integration into executives' compensation	Bod_Sust_Rem	Dummy variable that equals 1 if the executive compensation is linked to sustainability targets and 0 otherwise.
Sustainability committee	Sust_Com	Dummy variable that equals 1 if the Sustainable committee is established and 0 otherwise
Firm size	Size	Average revenues
Leverage	Leverage	Average debt-to equity ratio

Changes in ESG performance (dependent variable)

In this study, the M&A's capacity to enhance social and environmental performance is proxied by ESG scores related to social and environmental pillars, which are commonly used by scholars to assess non-financial results [Widyawati, (2019); Del Giudice and Rigamonti, (2020); Rajesh, (2020)]. In particular, the dependent variable was identified by a change in social (Social_performance_change) and environmental performance (Environ_performance_change) measured before (that is, on 31 December of the year before the announcement date) and after the M&A (31 December of the year following the closing date). To assess their steadiness over time, these variables were compared with the average data related to the

pre-acquisition period (t+1, t+2, t+3) and the post-integration period (t+1, t+2, t+3), according to recommendations in the literature [Martynova et al., (2007); Leepsa and Mishra, (2013); Jain et al., (2024)]. The acquisition year (t_0) was not considered, while the integration period (t+1') was identified separately within the post-integration period (t+1, t+2, t+3). Finally, a t-test was performed in order to determine the mean difference between the pre-acquisition period and the post-integration period, and to understand whether social and environmental performance before and after the M&A were statistically different.

In line with the extant literature [Rahman & Wu, (2024)], to calculate the change in social and environmental performance, the following formula introduced by Tampakoudis & Anagnostopoulou (2020) was used:

$$\text{Social_peformance_change} = \frac{AcquirerSocial_score_{t+1} - AcquirerSocial_score_{t-1}}{AcquirerSocial_score_{t-1}}$$

$$\text{Environmental_performance_change} = \frac{AcquirerEnvironmental_score_{t+1} - AcquirerEnvironmental_score_{t-1}}{AcquirerEnvironmental_score_{t-1}},$$

where:

$Acquirer\ (Social, Environmental)_score_{t+1}$ = the acquirer's performance at the end of the year after the closing date

$Acquirer\ (Social, Environmental)_score_{t-1}$ = the acquirer's performance at the end of the year before the announcement date

Social_performance_change = the change that occurred in the ESG social score in the selected period

Environmental_performance_change = the change that occurred in the ESG environmental score in the selected period

To assess ESG performance, data were retrieved from the Refinitiv Eikon database, enabling the calculation of more than 450 firm-level ESG indicators by reducing the risk of potential bias and facilitating consistency with other databases. In particular, Refinitiv Eikon is considered a leading tool for retrieving ESG scores, as it has been used by several scholars to address non-financial performance issues [Arouri et al., (2019); Dick et al., (2019); Liang et al., (2020); Caiazza et al., (2021); Barros et al., (2022)]. In

particular, this database calculates ESG performance according to a percentile-based methodology by classifying the ESG scores into four ranks: D (from 0 to 0.25), C (from 0.25 to 0.50), B (from 0.50 to 0.75), and A (from 0.75 to 1). The changes in performance calculated using the above-stated formulas were classified using these ranks.

The environmental and social scores retrieved from the Eikon Refinitiv database were calculated considering information that largely came from firms' corporate reporting (annual reports, sustainability reports, integrated reports, etc.). Hence, these data are based on information about social and environmental performance that is periodically disclosed in firms' reports, either on a voluntary basis or according to mandatory rules. The risk of this information being unreliable is mitigated by the assurance process, that is generally performed by external and independent auditors. Hence, the social and environmental scores retrieved from the Refinitiv Eikon database and used in this research can be considered reliable and effective indicators of the post-M&As' social and environmental performance.

The social scores refer to four categories: workforce, human rights, community, and product responsibility. "Workforce" weighs 10.1% on the overall social score and indicates the firm's capacity to ensure job satisfaction, healthy and safe workplaces, inclusion, and equal opportunities, while "human rights" – whose weight (14.6%) is the highest – refers to the firm's orientation to fundamental rights conventions. "Community", with a weight of 8.1%, refers to the firm's compliance with ethical principles, and "product responsibility" weighted at 8.7% refers to the firm's ability to provide high quality goods, and ensure consumers' health and safety.

The scores related to the environmental pillar are in three key areas: resource use, emissions, and innovation. "Resource use" weighs 8.1% and indicates the level of consumption of limited natural resources (air, water, land, etc.), while "emissions" (9.7%) refers to the firm's capacity to reduce emissions. "Environmental innovation" – which is the most relevant (weight 16.2%) – refers to the creation of market opportunities through new environmental technologies and processes or eco-designed products.

Corporate governance features (independent variables)

The independent variables consist of specific corporate governance features that have been investigated as possible factors affecting ESG performance changes. These variables have been selected considering the existing literature [Liao et al., (2015); Glass et al., (2015); Teti et al., (2017)] and the potential contribution that corporate governance bodies can provide to sustainability orientation and value creation for all stakeholders [de Villers et al., (2011); Salvioni & Almici, (2022); Almici, (2023)]. The selected corporate governance characteristics are sustainability-oriented and can be

considered factors enabling alignment between stakeholders' and management's interests, by enhancing the social and environmental performance.

In particular, the selected variables are as follows:

- Board size is measured by the natural logarithm of the number of board members (Faizul, 2017).
- Board gender diversity is proxied by the percentage of female directors, as suggested by the mainstream literature [Ben-Amar et al., (2017); Safari, (2022); Garcia and Herrero, (2022)].
- The non-executive board members' variable refers to the percentage of non-executive directors that are members without managing functions and without fulfilling the independence requirements.
- Board independence is evaluated by the percentage of independent directors [Mallin & Michelon, (2011); Garcia and Herrero, (2022); Almici, (2023)]. According to Italian regulation, independent directors are non-executive board members who fulfill additional independence requirements (e.g. lack of kinship relationship with the company and its shareholders; lack of professional or financial relationship with the company and the companies controlled) (Art. 147-ter, fourth clause, Legislative Decree n. 58 of 24 February 1998).
- The CEO–chairman separation is assessed by a dummy variable that equals 1 when these two functions are in charge of two different individuals and 0 otherwise [de Villers et al., (2011); Tsang et al., (2021); Almici, (2023)].
- The relationship between executive compensation and sustainability targets is measured by a dummy variable that equals 1 when executive remuneration depends on the achievement of non-financial goals and 0 otherwise.
- The establishment of the sustainability committee is measured using a dummy variable that equals 1 if firms have established this body and 0 otherwise [Faizul, (2017)].

Data were retrieved from the Eikon Refinitiv database. Average data were calculated by considering the five-year period 2018–2022 for each of the above-stated variables.

Control variables

Control variables consist of bidder's size and firm leverage; the first one is measured by average revenues related to the selected period, while the second one is calculated using the debt-to-equity ratio. Both are typical

control variables used to test M&As' impacts on firms' performance; in this regard, some studies have underlined the presence of a negative relationship between an acquirer's size and post-merger performance [Roll, (1986); Moeller et al., (2004); Masulis et al, (2007)], while others have demonstrated the lack of significance of this variable [Teti et al., (2017)]. The mainstream literature is about expecting that M&As involving large firms are likely to destroy value because managers are usually more entrenched, and the empire-building effect is more likely to occur.

With regard to leverage impacts, some studies have stated that this variable is not significant [Masulis et al., (2007); Teti et al., (2017)], while others have demonstrated the presence of a positive relationship between leverage and bidder's returns [Berger et al., (1997)] according to Jensen's (1986) position. In this regard, Jensen (1986) underlined that managers are generally reluctant to use debt financing to avoid control from external agents. According to Jensen's (1986) perspective, there should be a positive relationship between leverage and post-M&A's performance, as higher debts are likely to limit managerial discretion.

Results and discussion

Descriptive statistics and correlations

With reference to the main descriptive statistical results (mean, standard deviation, minimum, and maximum), Table 4 shows how the selected firms' social performance change ranged from −8.90% to 88.33%, with an average value of 9.99%, while the environmental performance change ranged from −31.23% to 90.33%, with an average value of 16.51%. These data demonstrate that M&As positively affect bidders' social and environmental performance rather than only pursuing management and shareholders' interests.

Table 4: Descriptive statistics

Variables	Mean	Std. Deviation	Min	Max
Change in Bidder's Social performance	9.99%	13.67%	-8.90%	88.33%
Change in Bidder's Environmental performance	16.51%	21.40%	-31.23%	90.33%
BoD_Size	11.43	2.83	6.00	18.00
BoD_Gend	37.83%	6.62%	11.11%	54.55%
BoD_NED	72.75%	14.51%	36.11%	95.83%
BoD_Ind	55.93%	13.52%	15.88%	84.60%
CEO-Chair	0.86	0.34	0	1
Bod_Sust_Rem	0.40	0.49	0	1
Sust_Com	0.85	0.36	0	1
Size	2,187.77	5,905.23	0.27	48,218.20
Leverage	142.11%	250.07%	0.37	2,563.40%

To verify the steadiness of the above-mentioned data, the average of the social and environmental performance for each of the three years before and after the M&A, as well as the total average related to the pre-acquisition and post-integration periods (Table 5) were calculated. These are in line with the average change in social and environmental performance shown in Table 4, referring to the period between the year before (t-1) and the year after (t+1) the M&A.

Table 5: Social and environmental performance of selected firms

Panel: N. 124	Social_performance	Environmental_performance
t-3	34.22	45.66
t-2	35.99	44.65
t-1	41.55	49.88
t_0	38.22	46.55
t+1'	41.98	54.23
t+1	42.01	52.66
t+2	42.02	54.65
t+3	38.22	55.89
Mean annual performance (M_pre)	37.25	46.73
Mean annual performance (M_post)	40.75	54.40
Change in bidder's performance (mean)	9.39%	16.41%

With regard to corporate governance characteristics, Table 4 shows how the selected firms' boards are medium-sized, consisting, on average, of 11 directors, with a minimum of 6 and a maximum of 18. Independent directors equal 56%, non-executive directors equal 72.25%, and female directors equal 37.83%. Furthermore, almost all selected firms establish the CEO–chairman separation, as well as the sustainability committee; in this regard, the related average dummy variables equal 0.86 and 0.85, respectively (against the maximum, which equals 1).

These data are in line with the findings of Faizul (2017) and Almici (2023), which highlight a board's composition oriented toward sustainability. With reference to the control variables, the selected firms showed a high leverage ratio (142.11% on average), while their size—proxied by revenues-was, on average, limited.

Tables 6 and 7 show pairwise Pearson correlations for the dependent, independent, and control variables with reference to the change in social, and environmental performance, respectively. Table 6 underlines a positive correlation between the change in social performance and the independent variables, except for board size, board gender diversity, and sustainability integration into executives' compensation. In this regard, the statistically significant variables are directors' independence, the presence of non-

executive directors, and CEO–chairman separation. Lastly, with reference to environmental performance, only directors' independence and the presence of non-executive directors are both positively correlated and statistically significant. In general, the correlation indexes shown in Tables 6, and 7 assume values far from either 1 or -1, suggesting that the multicollinearity problem is unlikely.

Table 6: Pearson correlation matrix (dependent variable: change in bidder's social performance)

Variables	1	2	3	4	5	6	7	8	9	10
Change in bidder's Social performance	1									
Board size	-0.12	1								
Board gender diversity	-0.02	0.01	1							
Non-executives board members	0.26**	0.13	0.05	1						
Board independence	0.16*	0.01	0.09	0.01	1					
CEO-Chair separation	0.17*	0.05*	0.01	0.01	0.02	1				
Sustainability integration into executives' compensation	-0.01	-0.01	0.06	0.02	0.03	0.13	1			
Sustainability committee	0.06	0.01	0.01	0.06	0.08	0.01	0.02	1		
Firm size	0.06	0.03	-0.07	-0.02*	-0.02	0.01	-0.10	0.13	1	
Leverage	0.01	-0.07	0.13	0.02	0.01	-0.01	-0.05	0.06	0.11	1

Notes: *, ** indicate statistical significance at $p < 0.05$, $p < 0.01$

Table 7: Pearson correlation matrix (dependent variable: change in bidder's environmental performance)

	Variables	1	2	3	4	5	6	7	8	9	10
1	Change in bidder's Environmental performance	1									
2	Board size	-0.12	1								
3	Board gender diversity	-0.06	0.06	1							
4	Non-executives board members	0.20*	0.14	0.05	1						
5	Board independence	0.03*	0.09	0.10	0.11	1					
6	CEO-Chair separation	-0.03	0.16	0.09	0.13*	0.14	1				
7	Sustainability integration into executives' compensation	0.67	-0.07	0.06	-0.02	0.05	0.13	1			
8	Sustainability committee	0.05	-0.11	-0.01	0.05	-0.07*	-0.04	0.21	1		
9	Firm size	-0.07	-0.11	-0.07	-0.02	-0.02	-0.03	-0.01	0.14	1	
10	Leverage	0.01	-0.03	-0.12	0.02	0.01	-0.01	-0.05	0.06	0.11	1

Change in non-financial performance results (H1, H2)

The results shown in Tables 9, 10 and 11 support H1 and H2, demonstrating that M&As positively affect the achievement of non-economic benefits, enabling the safeguard of interests beyond those of management and shareholders. This result contrasts with the observations of some scholars [Dunn et al., (2016); Lilien et al., (2020); Amano, (2022)]. Thus, this study enhances the existing literature by providing specific results about M&A impacts on non-financial performance – in particular, social and environmental dimensions - and promoting a shift from the traditional

economic perspective. In addition, these results offer a view focused on the M&A's impacts on bidders' non-financial performance, underlining a different perspective from other studies [Caiazza et al., (2021); Huang et al., (2023)], in which the focus is given to the contribution of the ESG pillars to the M&As success.

In particular, these findings strengthen the specific strand of literature that underlines a positive relationship between M&As and non-financial performance, as proxied by ESG scores [Tamakoudis & Anagnostopoulou, (2020); Gonzales-Torres et al., (2020); Mihaiu et al., (2021); Barros et al., (2022)]. In addition, this study's findings differ from those of previous studies that highlighted a negative relationship [Tampakoudis et al., 2021] or a lack of a significant relationship [Fatemi et al., (2017)] between the involved variables.

Table 9 shows that after an M&A transaction, bidders' social performance (94%), and environmental performance (95%) are usually improved. In contrast, the worsening of firms' performance after M&As is limited, ranging from a minimum of 5% (environmental performance) to a maximum of 12% (ESG performance). As shown in Table 10 social and environmental performance tended to improve to varying extents in the years after the M&A (post-integration period). The difference between the scores related to the selected years (t+1, t+2, and t+3) and the average of the pre-acquisition period is positive and generally increasing. The results are statistically significant, meaning they are a result of the merger, and are unlikely to be caused by chance.

With reference to the intensity of the performance increase, Table 11 illustrates the magnitude of the positive change in performance, which was calculated according to the Eikon Refinitiv ESG ranks shown in Table 8. Table 11 demonstrates that 59.32% of the selected firms improved their environmental performance by benefiting from a rank shift, of which 15.17% had a two-rank upgrade.

Social performance showed a higher increase than environmental performance, with 64.10% of the selected firms increasing their social scores with one rank shift, and 23.00% benefiting from a double rank shift.

The total average data which are equal to 11.09% for social performance, and 18.60% for environmental performance, are slightly higher than those shown in Table 3, as they were calculated by considering increases exclusively, while downgrades were not taken into account.

These differences are statistically relevant, so they can be assumed to result from M&As.

Hence, despite the average data (Table 5) underlining a higher increase in environmental performance than social performance after an

M&A, the analysis of the changes indicates that the intensity of the increase (rank shift) (Table 11) is greater for social performance.

Table 8: ESG score range

Score range	Description	
0 to 25	First quartile (D)	Poor relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly
> 25 to 50	Second quartile (C)	Satisfactory relative ESG performance and moderate degree of transparency in reporting material ESG data publicly
> 50 to 75	Third quartile (B)	Good relative ESG performance and above average degree of transparency in reporting material ESG data publicly
> 75 to 100	Fourth quartile (A)	Excellent relative ESG performance and high degree of transparency in reporting material ESG data publicly

Table 9: Social and environmental performance change (number of firms)

	Increase	Decrease
Social_performance_change	117	7
Environmental_performance_change	118	6

Table 10: Statistical comparison between social and environmental performance

	Social_performance		Environmental_performance	
Pairs for comparison	Mean difference	*t*-value	Mean difference	*t*-value
(t+1') - M_pre	4.73	3.45	7.5	6.78
(t+1) - M_pre	4.76	3.66*	5.93	4.45*
(t+2) - M_pre	4.77	3.98*	7.92	6.54*
(t+3) - M_pre	0.97	0.33*	9.16	8.15**
M_post - M_pre	3.50	2.28*	7.67	6.54*

Table 11: Rank shift

	Social_performance_change			Environmental_performance_change		
	Number of bidders	Mean	*t*-value	Number of bidders	Mean	*t*-value
B → A	5	11.22%	7.32*	7	15.35%	8.93*
C → B	45	10.21%	9.81*	43	12.33%	7.65
D → C	8	8.99%	6.22*	9	8.35%	6.54*
D → B	8	12%	6.54*	5	23.78%	15.27*
C → A	9	13.01%		6	33.21%	22.11
No rank shift	42			48		
Total	117	11.09%		118	18.60%	

Consistent with what Barros et al. (2022) observed, the aforementioned results demonstrate how M&As positively affect the improvement of both social and environmental performance, which on average, are enhanced the most by the reorganization implied by these strategic operations. However, this study points to further elements to be considered: with reference to social performance, rank shifts are stronger than environmental performance shifts. M&As are relevant opportunities for acquirers to renew the corporate culture in terms of higher inclusion, non-

economic employees' satisfaction, accessibility, effective gender policies, safeguarding human rights, security, and health. The social issues play a relevant role in terms of value creation, by contributing to problem solving, such as cultural friction and brain drain [Huang et al., (2023)]. At the same time, external growth provides (1) more sustainable resources in terms of financial assets, skills, and green patents that can be used to mitigate the firm's impacts on the environment and (2) the opportunity to develop more efficient and low-impact business models.

Once the contribution of M&As to fulfilling social and environmental expectations in the long-run was understood and explained, it was important to identify the drivers of this process. To do so, a regression analysis was performed using specific governance characteristics as independent variables [Teti et al., (2022)].

Regression analysis (H3)

The results shown in Tables 12, and 13 support Hypothesis 3, even with reference to specific corporate governance features and with different effects depending on the selected performance (social, or environmental). The overall R^2 is 55% with regard to social performance, and 53% with reference to environmental performance, meaning that these models explain nearly 55%, and 53%, respectively, of the variation in non-financial performance changes before and after selected M&As.

The explanatory variables for this analysis refer to board's characteristics, consisting of board size, gender diversity, non-executive directors, board independence, CEO–chairman separation, integration of sustainability into a CEO's remuneration, and establishment of a sustainability committee. Two additional control variables are classified as bidder's size and bidder's leverage ratio.

The changes in social performance can be explained in terms of specific corporate governance characteristics, namely the presence of non-executive directors, the independence of directors, and the CEO–chairman separation (Table 12). In fact, the coefficients (ß) related to these variables are positive and statistically significant meaning that corporate governance features may facilitate the improvement of non-economic performance when an M&A transaction occurs. In particular, with reference to social performance, the selected variables assume the following values: ß = 0.38 and Þ = 0.0241, ß = 0.44 and Þ = 0.0423, and ß = 0.06 and Þ = 0.0459. Indeed, M&As can enable the reorganization of firm's policies, according to principles such as inclusion, transparency, protection of human rights, and safeguard of all involved interests (economic and non-economic); however, the achievement of these results requires a board of directors ensuring effective control over the management's activity.

With specific reference to environmental performance, the significant variables include only the presence of non-executive directors and their independence (assuming ß = 0.36 and Þ = 0.049 and ß = 0.56 and Þ = 0.02, respectively), while CEO–chairman separation is not significant. The presence of non-executive and independent directors affects the undertaking of strategic decisions, facilitating the fulfillment of environmental expectations by emphasizing the relevance of monitoring activities and the agency-stakeholder framework in the M&A context. The magnitude of the impacts of the corporate governance features—explained by the respective coefficients ß—is higher with reference to environmental performance than social performance, thus underlining the increasing attention paid to the ecosystem's safeguard. In particular, these findings highlight the coherence of the selected theoretical framework, as management activity may be oriented toward the fulfillment of non-economic expectations by specific monitoring activities performed by non-executive and independent directors. The relevance of non-executive independent directors in order to facilitate value-creating M&As—on the one hand—confirms what was stated by previous literature and—on the other hand—contributes according to the main perspectives: it addresses the impact of non-executive directors in the M&A context and it investigates the effects of board independency on post-M&A performance by focusing on non-financial effects rather than economic effects that have been preferred by the mainstream literature [Teti et al., 2017; Chadam, 2018; Naciti, 2019; Defranq et al., (2021)].

The analysis of these governance characteristics with regard to post-merger social and environmental performance, is an innovative element of this study, demonstrating the leading role played by governance within the value creation process. In fact, with reference to environmental performance, the presence of independent and non-executive directors facilitates the undertaking of strategic decisions promoting green investments, as well as the development of specific skills improving the relationship between the firm and the environment.

Similarly, CEO–chairman separation's coefficient is positive and significant in explaining social performance by reducing the risk of management entrenchment. Indeed, the appointment of different people for these two roles increases the effectiveness of corporate governance by facilitating the alignment between management's and stakeholders' interests, as well as the undertaking of strategic decisions according to sustainability principles and increasing attention for all stakeholders [Hambrick & D'Aveni, (1992); de Villers et al., (2011)]. In particular, CEO–chairman separation reduces agency costs by overcoming the traditional conflict between management and stakeholders. This variable is not significant with reference to environmental performance, which benefits more from non-

executive independent directors in order to safeguard all stakeholders according to transparency, global responsibility, and shared wealth principles.

This study's findings are aligned with the mainstream literature, which assumes that CEO duality facilitates value-destroying M&As, while CEO separation can contribute to the improvement of post-M&A performance. In this regard, this study confirms the presence of a positive relationship between CEO separation and post-M&A performance, as stated by Masulis et al. (2007), Kelton and Yang (2008), Goranova et al. (2010), and Teti et al. (2017).

The other corporate governance features are not significant in explaining the change in bidder performance after an M&A transaction; the board size, gender diversity, the integration of sustainability in CEO's compensation, and the establishment of the sustainability committee do not affect management in terms of performing M&As and impacting on social and environmental performance. In this regard, corporate governance features that traditionally affect a strategic firm's orientation toward sustainability do not facilitate—conversely to expectations—the fulfillment of stakeholders' social and environmental expectations.

With reference to board size, this study's findings underline the lack of a significant relationship, confirming the results achieved by other authors with reference to the M&A context [Masulis et al., (2012); Teti et al., (2017); Defrancq et al., (2021)]. This study underlines the leading role played by variables directly related to the control mechanisms over the management activity, while the number of board's members (on average 11.43) is not significant.

Similarly, board gender diversity and the establishment of a sustainability committee are not significant, even if the mainstream literature has underlined the importance of these corporate governance features for orienting the firm's activity toward sustainability principles and value-creating transactions. In this regard, this study contributes to the existing literature by investigating the role played by the sustainability committee in the M&A context, conversely to previous literature that has addressed this issue by considering other contexts. The lack of a significant relationship is likely to be attributed to the soft role played by this body in terms of management's sustainability orientation; indeed, the most relevant role is played by strong monitoring variables, such as the non-executive independent directors and CEO–chairman separation.

Otherwise, with reference to the topic of board gender diversity, this study's results are aligned with what was observed by some authors in terms of a lack of significant relationship between gender diversity and M&A's financial value creation by also providing an analysis based on non-financial

results [Ahern and Dittmar, (2012); Chadam, (2018); García & Herrero, (2022)]. The evidence provided by this study differs from that shown by other studies in terms of establishing a positive relationship between the selected variables [Huang and Ksigen, (2013); Levi et al., (2014); Chen et al., (2016); Defrancq et al., (2021)].

With reference to the integration of sustainability goals into CEO compensation, this study highlights the lack of significance of this variable in terms of improving non-financial performance in the M&A context. In this regard, the findings are misaligned compared to what was stated by some scholars arguing that there is a positive relationship between this variable and the enhancement of non-financial performance; this misalignment is explained by the specific analysis context: M&As. Indeed, the integration of sustainability into CEO compensation has—with reference to M&A transactions—a low influence compared to specific mechanisms aimed at facilitating monitoring activities over management. The analysis of this topic according to the sustainability and M&A perspective provides new insights compared to the previous literature; in this regard, the literature has mainly focused on the effects generated by CEO compensation on acquirer's financial performance, neglecting the implications in terms of non-financial performance. In addition, attention was mainly focused on the analysis of the fixed compensation impacts rather than on considering the variable components; in this regard, Teti et al. (2017) underlined a positive relationship between CEO fixed compensation and post-M&A financial performance.

Similarly, the selected control variables (firm size and leverage) were not significant in explaining the M&As' impact on social and environmental performance. In this regard, this study confirms what was observed by Teti et al. (2017) in terms of the non-significance of these variables. In contrast, the findings are misaligned with the literature claiming the presence of a relationship between the acquirer's size, leverage, and post-M&A performance. With reference to the leverage variable, the lack of significance can be explained by considering the selected firms' corporate governance system—the insider one—which typically delegates controls to specific internal bodies rather than to the market (market for control).

This study's findings are consistent with the current literature with reference to the relationship between M&As and ESG performance. Recent studies have underlined how these strategic operations can contribute to the optimization of results in favor of all stakeholders. However, this study contradicts the idea that M&As are value-destroying operations, even if there is a clear need to establish specific monitoring governance mechanisms to allow value creation for all stakeholders. Thus, this study provides an

innovative perspective to the existing literature, by identifying corporate governance as a potential driver of the value creation process.

Table 12: Social ESG scores

Variables	Coefficient	Statistical significance	*t*-statistics
1. BoD_Size	-0.00628871961399296		-1.383023826135
2. BoD_Gender	-0.0487463563995019		-0.250451439280289
3. BoD_NED	0.383116069996874	*	2.46227309356784
4. BoD_Ind	0.440696054304058	*	2.18555906630533
5.CEO-Chair separation	0.0567219390410482	*	2.14467534673467
6. BoD_Sust_Rem	-0.00422517465517614		-0.155726449801811
7. Sust_Com	0.0209457351201844		0.570666994639123
8. Size	0.0000813783580676883		0.677123586268357
9. Leverage	0.0846117995749297		0.458987884456365
R^2 overall	0.550973482689021		
Number of firms	124		

Notes: *, ** indicate statistical significance at $p < 0.05$, $p < 0.01$

Table 13: Environmental ESG scores

Variables	Coefficient	Statistical significance	*t*-statistics
1. BoD_Size	-0.00797688816673932		-1.12669176503743
2. BoD_Gender	-0.175818879018832		-0.580164386039548
3. BoD_NED	0.358794753215286	*	0.0491693774757041
4. BoD_Ind	0.557726505031703	*	0.0209457256037092
5.CEO-Chair separation	-0.0415321756212307		-1.43653296432231
6. BoD_Sust_Rem	0.0233196807786832		0.552006897564679
7. Sust_Com	0.0121823556979215		0.213168294432659
8. Size	-0.000170744173662427		-1.29964678145347
9. Leverage	0.147858744476428		0.733732452080867
R^2 overall	0.533825694314818		
Number of firms	124		

Notes: *, ** indicate statistical significance at $p < 0.05$, $p < 0.01$

Conclusions, limitations, and main implications

This study's aim is twofold: (1) to verify whether M&As positively affect social and environmental performance and (2) to select the relevant enablers by focusing on corporate governance characteristics.

The findings show that M&As positively affect social and environmental performance, as proxied by the ESG score, as long as specific corporate governance requirements are fulfilled (board members' independence, CEO–chairman separation, and the presence of non-executive directors). With reference to changes in social and environmental scores, the reliability of the results was tested by calculating the average social and

environmental performance in the three years before and after the M&A. Improvements were observed, demonstrating firms' growing awareness of non-economic issues. These scores increased after the M&As due to effective corporate governance systems, providing contrasting evidence to the research reporting the value destruction of M&As.

This study is aligned with the academic literature on the relationships between M&As and ESG performance and enhances it by identifying the potential drivers of this process.

Corporate governance features underline the need to establish specific control mechanisms so that CEOs safeguard all stakeholders' economic and non-economic interests. Thus, even the results related to the significant corporate governance variables are aligned with the previous literature, although this study's perspective is different. In this regard, this study reveals that M&As can positively affect social and environmental performance due to established corporate governance systems.

This study contributes to the extant literature in several ways: (1) it strengthens the recent and limited evidence about M&As' roles in fulfilling social and environmental expectations by overcoming the traditional belief that these transactions either destroy value or benefit only shareholders; (2) it investigates the variables enabling this process by linking corporate governance, M&As, and non-financial performance, rather than focusing on only one dimension or only economic effects; (3) the selected corporate governance variables include additional aspects to those traditionally addressed by scholars, according to a sustainability-based perspective, to test whether specific corporate governance conditions facilitate the strategic orientation toward sustainability; and (4) it is based on the stakeholder-agency framework, which has rarely been used for the analysis of this topic.

The safeguard of social and environmental performance requires specific enabling conditions, mainly related to control activities performed by the board of directors' members, especially independent and non-executive members, and by CEO-chairman separation rather than by corporate governance features known to facilitate an orientation toward sustainability (e.g. integration of sustainability into CEOs' compensation, establishment of the sustainability committee, and gender diversity).

This evidence is consistent with insider systems' features, characterized by controls performed by specific corporate governance bodies rather than by the market. These findings are aligned with studies by Masulis et al. (2007) and Teti et al. (2017), demonstrating that these features may reduce agency costs and the risks of management implementing value-destroying strategies.

In terms of research implications, this study highlights the potential role that corporate governance can play in strengthening the impact of

M&As' on bidders' social and environmental performance. The results underline the opportunity to further explore this issue by including listed firms in other countries' stock exchanges to perform a comparative analysis between insider and outsider systems. Second, this research focused only on social and environmental performance, and future studies could also consider economic performance. Third, this research demonstrates that M&As positively affect the achievement of social and environmental goals, even if these transactions typically have disruptive effects, by implying strong changes in the bidder's structure. It relies on Eikon Refinitiv ESG scores, and these findings could be validated using alternative ESG measures.

This study's results may be of interest to investors, financial analysts, policymakers and regulators for its practical implications. First, investors and financial analysts can gain a greater awareness of the impact of M&As on non-financial performance, considering the growing relevance of ESG factors.

Second, policymakers should encourage M&As driven by a sustainability-oriented board of directors, providing the tangible and intangible resources needed to manage current social and environmental challenges (e.g. social inclusion, gender equality, climate change, pollution).

Third, the findings can provide regulators with useful insights into opportunities to strengthen specific requirements in terms of independence and appointment of non-executive directors and CEO-chairman separation, especially for listed firms.

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