

The role and impact of ESG standards in mergers and acquisitions. Empirical analysis of stakeholders, synergies, and firm characteristics

Research Article

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Abstract: This study investigates the role of Environmental, Social, and Governance (ESG) standards in mergers and acquisitions (M&A), focusing on their influence across different stages of the M&A process, stakeholder engagement, and the realization of synergies. Data were collected from 211 publicly traded companies listed on the Warsaw Stock Exchange, which have engaged in M&A transactions over the past 5 years. Results reveal that larger firms place greater emphasis on ESG factors during key stages such as target selection, due diligence, and integration planning. While ESG's impact on innovation and financing was less pronounced, it played a critical role in attracting talent, improving governance, and achieving synergies. Interestingly, the ownership structure (domestic vs foreign) showed little impact on the perceived importance of ESG, except in relation to talent management. These findings indicate that ESG is becoming increasingly integral to M&A strategies, particularly for larger firms, while smaller companies may need to enhance their ESG practices. The study concludes with implications for future research, calling for more exploration into how ESG affects innovation and long-term synergies in M&A transactions.

Keywords: ESG • Mergers and acquisitions • Stakeholders • Synergy realization • Corporate governance • Sustainability • Firm size • Emerging markets

1. Introduction

The role of Environmental, Social, and Governance (ESG) standards in corporate governance and business strategy has gained increasing attention, particularly in mergers and acquisitions (M&A). Although research has examined ESG's effects on corporate performance, stakeholder engagement, and regulatory compliance, its specific influence on the different stages of M&A remains underexplored. Existing studies offer limited empirical evidence on how ESG shapes M&A processes beyond these broader corporate outcomes (Kim et al., 2022; Manteuffel, 2024; Zheng et al., 2023).

The significance of ESG is particularly evident in the European Union (EU), where stringent regulations such as the corporate sustainability reporting directive (CSRD) and the corporate sustainability due diligence directive (CSDD)

drive corporate compliance with sustainability standards. These frameworks compel companies to integrate ESG factors into their business practices, making it a critical component in assessing M&A strategies (Manteuffel, 2024).

This study analyzes how ESG influences key stages of the M&A process and synergy realization, and how firm size and location condition its importance.

Based on a comprehensive review of the literature, we developed the following hypotheses: H1: ESG factors hold varying levels of importance across different stakeholder groups; H2: ESG integration will positively influence the realization of M&A benefits, though the distribution of these benefits is expected to be uneven; H3: The importance of ESG factors will vary across different stages of the M&A process; H4: Geographic location significantly affects the perceived importance of ESG in M&A; H5: Firm size and ownership structure are expected to moderate the importance of ESG in M&A.

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The data for this study were collected from publicly traded companies on the Warsaw Stock Exchange that participated in M&A transactions in the past 5 years. Responses were analyzed using both descriptive and inferential statistical methods, with a focus on understanding how ESG influences M&A outcomes across different firm characteristics and regions.

This study is structured as follows: Section 2 provides a detailed literature review, followed by a discussion of the methodology used in the study. The results are then presented and discussed considering the hypotheses, and the study concludes with implications for future research and managerial practice.

2. Literature review

The growing focus on ESG standards in corporate governance has spurred an increasing body of research. However, while ESG is widely recognized as a critical component in corporate strategy, its specific role in M&A has received comparatively less scholarly attention (Martiny *et al.*, 2024).

The existing literature extensively explores the role of ESG in M&A transactions, providing evidence of its positive impact on business performance, post-M&A outcomes, and stakeholder engagement. Kim *et al.* (2022) demonstrate that ESG engagement enhances business performance in cross-border M&A, while also mitigating the diversification discount. Similarly, Zheng *et al.* (2023) find that higher pre-merger ESG standards improve post-M&A performance, especially through synergy creation, and increase the likelihood of deal completion. Barros *et al.* (2022) expand on this by showing that M&A operations positively affect firms' ESG scores across all ESG pillars in the year following the transaction, highlighting a direct link between M&A activity and sustainability improvements. Key studies, such as Chen *et al.* (2006), Richardson and Welker (2001), or Verrecchia (2001), highlight how proactive corporate social responsibility (CSR) practices and accurate CSR disclosure can reduce information asymmetry, lower transaction costs, and enhance firm competitiveness and market liquidity. Caiazza *et al.* (2021) further link well-developed CSR and higher ESG scores with better long-term performance in M&A deals.

The rise of sustainability in M&A is closely tied to new regulatory frameworks concerning ESG, particularly in the EU. Manteuffel (2024) emphasizes that regulations play a key role in the growing importance of ESG in M&A. The Taxonomy Regulation (2020/852) requires companies to disclose the sustainability of their activities, while the upcoming CSRD will expand mandatory ESG reporting from 2024. Additionally, the CSDD will enforce stricter due diligence obligations, pushing companies to

address environmental and human rights impacts, further embedding ESG into M&A strategies. However, these regulations can also lead to the risk of greenwashing (Csapi *et al.*, 2024; Gafni *et al.*, 2024; Jin *et al.*, 2024).

Pedersen *et al.* (2021) argue that ESG scores reflect firm fundamentals and investor preferences, influencing portfolio selection and asset pricing. Similarly, Pástor *et al.* (2021) suggest that ESG preferences promote greener firms and investments, though they also note that green assets often have lower expected returns except during positive ESG shocks. Avramov *et al.* (2022) address the role of ESG uncertainty, noting that it increases market premiums and affects the risk-return trade-off, thereby influencing investor decisions and the overall market. Soana (2024) finds that ESG-linked incentives positively impact both ESG performance and the management of stakeholder controversies, particularly in the banking sector. Moreover, Talan *et al.* (2024) emphasize that sustainable business practices, including ESG, holistically add value across all stakeholders, bridging gaps in traditional investment approaches.

There are still important gaps in the literature on ESG and M&A. Although ESG is linked to better M&A outcomes, little is known about the specific mechanisms through which ESG affects different stages of the process, especially integration and synergy realization. The influence of ESG on stakeholder relationships, including how particular ESG dimensions matter for different groups, also remains underexplored. Research has paid limited attention to how ESG shapes distinct types of synergies (e.g., operational or financial) and to how firm characteristics – such as industry, size, or governance structure – interact with ESG engagement. These gaps point to the need for further studies to clarify ESG's role in M&A processes and outcomes.

3. Hypotheses development

Our first hypothesis (H1), “the importance of ESG factors is expected to vary across different stakeholder groups in the M&A process,” suggests that ESG considerations hold differing levels of importance for various stakeholders involved in M&A. The literature broadly indicates that financial stakeholders, such as investors and equity providers, tend to prioritize ESG due to its influence on long-term value creation and risk management (Pástor *et al.*, 2021; Pedersen *et al.*, 2021). Conversely, other groups like employees, clients, and suppliers may engage with ESG based on factors more directly related to social responsibility or operational benefits (Soana, 2024; Talan *et al.*, 2024).

Our second hypothesis (H2), “the integration of ESG standards will positively influence the realization of

benefits in M&A transactions, though the distribution of these benefits is expected to be uneven,” builds on extensive literature that underscores the positive impact of ESG on post-M&A outcomes. Studies by Kim et al. (2022) or Zheng et al. (2023) highlight that companies with higher ESG engagement achieve better post-merger performance, particularly through synergy creation and deal completion. Similarly, Barros et al. (2022) demonstrate that M&A activities lead to improvements in firms’ ESG scores across various pillars, emphasizing the connection between sustainability and business success.

The above findings also serve as the foundation for our third hypothesis (H3), “the importance of ESG factors will vary across different stages of the M&A process.” The literature demonstrates that ESG integration enhances post-M&A performance, particularly through synergy creation and deal completion (Barros et al., 2022; Kim et al., 2022; Zheng et al., 2023). However, the role of ESG may differ depending on the specific phase of the M&A process. For instance, Manteuffel (2024) highlights that the CSDD, which enforces stricter obligations on companies, plays a crucial role in embedding ESG into the due diligence phase of M&A. While stages such as due diligence and post-merger integration are likely to benefit more directly from ESG engagement, there is limited research on how ESG’s importance varies in other phases of M&A process.

Our fourth hypothesis (H4), “the geographic location of the target company significantly affects the importance of ESG in M&A processes,” is based on the varying ESG regulations across different jurisdictions. Manteuffel (2024) points out that the regulatory environment in the EU heavily emphasizes ESG in M&A, while other regions like the US and China also have their own frameworks promoting sustainability and transparency (Csapi et al., 2024; Gafni et al., 2024; Jin et al., 2024).

Our final hypothesis (H5), “firm size and ownership structure are expected to moderate the importance of ESG in M&A processes,” suggests that both larger firms and those with foreign ownership may place greater emphasis on ESG factors during M&A. Research shows that larger firms are more likely to integrate ESG due to greater regulatory scrutiny, stakeholder expectations, and their ability to implement comprehensive sustainability strategies (Caiazza et al., 2021). Manteuffel (2024) highlights that current ESG regulations, particularly in the EU, primarily target large companies, making size a key factor in ESG compliance. Additionally, foreign-owned firms, especially those operating in regions with stricter ESG regulations, may prioritize ESG to align with global standards and mitigate reputational risks (Petridis et al., 2022). Thus, firm size and ownership structure are expected to

moderate the extent to which ESG is prioritized in M&A transactions.

4. Methodology

This study employs a quantitative research approach to investigate the role and impact of ESG standards on M&A, with a particular focus on the importance of ESG at various stages of the transaction process and its influence on synergies, stakeholder engagement, and firm characteristics. The data for this study were collected between February and May 2024 using computer-assisted telephone interviewing (CATI) and computer-assisted web interviewing (CAWI) methods among companies listed on the Warsaw Stock Exchange (GPW) that participated in M&A in the past 5 years (screening question). Out of 410 companies contacted, 211 (51.46%) voluntarily participated. With a population of $N = 413$ and a 95% confidence level, the margin of error is 4.72%. As the selection of one company did not influence others and the responses were independent, the data can be considered a random sample.

Responses, excluding the screening question and respondent descriptors, were measured on a 5-point Likert scale (1: “strongly disagree” – 5: “strongly agree”). This scale assessed the perceived importance of ESG across different stakeholder groups, benefits, M&A stages, as well as target size and location. By utilizing both CAWI and CATI methods, and combining descriptive and inferential statistical analysis, the study offers a comprehensive view of how ESG standards may influence M&A. The 5-point Likert scale enabled a detailed evaluation, while statistical tests revealed the influence of firm size, ownership structure, and geographic location on ESG integration in M&A transactions.

The data analysis was conducted in several stages. First, descriptive statistics were used to conclude on the distribution of answers. Second, One Way Analysis of Variance (ANOVA) was employed to examine if there are statistically significant (i.e., expected in the population as seen in the sample) differences in analyzed questions with regards to company size (small, medium, large, very large) and ownership structure (domestic or with foreign capital). In other words, ANOVA tests the null hypothesis that means are equal in all groups. At its core, the idea behind ANOVA is to examine how the dependent variable varies (i.e., check its variance) across samples and to conclude if population means are different between groups. To account for a possible lack of homogeneity of variance (per the Levene’s test, with a null hypothesis of homogeneity of variance), ANOVA was complemented with the robust test of equality of means (Welch) and – to account

for lack of normal distribution – with the Kruskal-Wallis non-parametric test (both, Welch and Kruskal-Wallis have the same hypothesis setup as ANOVA). This two-step analysis allowed for an exploration of differences in ESG perceptions according to the geographic location of acquisition targets, such as developed markets, emerging markets, the EU, and Central and Eastern Europe (CEE).

5. Results

5.1 Role and impact of ESG standards in M&A: Analysis of stakeholders, synergies, and key process stages

Table 1 provides a detailed statistical summary of the perceived importance of ESG standards across different stakeholder groups in M&A transactions, as rated on a 5-point Likert scale (from “strongly disagree” to “strongly agree”). While all stakeholder groups recognize the significance of ESG to some extent, there are notable differences in the mean scores and total sums, which help to highlight the varying levels of agreement.

Equity capital providers stand out as the most affected group, with the highest mean score of 4.00 and a sum of 845, indicating strong agreement on the importance of ESG standards for this group. Firm image in the media (mean value = 3.97) and employees (mean value = 3.92) follow closely, with sums of 838 and 827, highlighting the significance of ESG in shaping public perception and managing employee expectations. Suppliers (mean value = 3.89, sum = 820) and clients (mean value = 3.78, sum = 798) are seen as somewhat less impacted by ESG, though still important. Debt capital providers (mean value = 3.91, sum = 826) also view ESG as crucial, but slightly less so than equity providers, reflecting the varying levels of pressure faced by these groups.

Building on the above insights concerning the importance of ESG standards across different stakeholder groups, statistics presented in Table 2 shift the focus to the perceived impact of ESG on achieving synergies and specific benefits during the M&A process. The results reveal notable differences in the role ESG plays in various aspects of M&A outcomes.

The highest-rated benefit is talent attraction or retention, with a mean score of 4.02 and a sum of 848, showing that ESG practices are crucial for managing human resources during M&A. This reflects growing employee expectations for corporate responsibility. Reducing environmental compliance costs follows closely (mean value = 3.96, sum = 836), indicating that ESG is important in minimizing regulatory costs and enhancing financial efficiency. Corporate governance during post-merger integration also scores high (mean value = 3.95, sum = 834), emphasizing the role of ESG in ensuring governance quality. Innovation ranks slightly lower (mean value = 3.91, sum = 826), indicating ESG's positive, but not primary, influence. Identifying value (mean value = 3.86, sum = 814) and achieving synergies (mean value = 3.85, sum = 813) show that ESG is important, though not as prominent as in governance or cost reduction. Operational efficiency ranks the lowest (mean value = 3.82, sum = 807), suggesting ESG's stronger impact on strategic and reputational outcomes than on immediate operational gains. The varying importance of these benefits highlights the distinct contributions of ESG dimensions, with the social dimension being central to talent attraction and retention, the environmental dimension playing a critical role in reducing compliance costs, and the governance dimension ensuring integration quality and long-term strategic alignment during M&A.

Following the analysis of how ESG standards influence stakeholder perceptions and synergies in M&A, statistics presented in Table 3 shift the focus to the importance of ESG factors at different stages of the M&A process. Using a

	Mean value	Median	Mode	Standard deviation	Minimum	Maximum	Sum	Coefficient of variation (%)
Providers of equity capital	4.00	4	4	0.87	1	5	845	21.75
Firm image in media	3.97	4	4	0.80	1	5	838	20.10
Employees	3.92	4	4	0.83	1	5	827	21.10
Providers of debt capital	3.91	4	4	0.81	1	5	826	20.77
Suppliers	3.89	4	4	0.95	1	5	820	24.52
Clients	3.78	4	4	1.00	1	5	798	26.46

Notes: Statistical summary of responses to the question: “ESG standards are of great importance in mergers and acquisitions conducted by our organization due to their impact on...” *N* = 211.

Table 1. Importance of ESG for different stakeholders in M&A (H1).

Source: Own elaboration.

	Mean value	Median	Mode	Standard deviation	Minimum	Maximum	Sum	Coefficient of variation (%)
Attracting (or retaining) talent in the merged/acquired companies	4.02	4	4	0.83	1	5	848	20.60
Reducing costs of environmental compliance	3.96	4	4	0.77	2	5	836	19.55
High efficiency and quality of corporate governance during the integration phase of merged companies	3.95	4	4	0.80	2	5	834	20.18
Increasing innovation in merged companies	3.91	4	4	0.87	1	5	826	22.35
Identifying sources of value in merger and acquisition processes	3.86	4	4	0.77	1	5	814	20.05
The ability to achieve synergies in merger and acquisition processes	3.85	4	4	0.76	2	5	813	19.66
Improving operational efficiency in merged companies	3.82	4	4	0.69	2	5	807	18.12

Notes: Statistical summary of responses to the question: "ESG standards are of great importance for..." N = 211.

Table 2. Impact of ESG standards on benefits in M&A transactions (H2).

Source: Own elaboration.

5-point Likert scale, respondents rated the significance of ESG at various key points in the M&A lifecycle, from target selection to post-merger integration. The results highlight varying degrees of importance placed on ESG throughout the transaction process.

The due diligence stage is seen as the most critical for ESG, with a mean score of 3.89 and a sum of 820, highlighting its importance in identifying risks. Target selection follows closely (mean value = 3.87, sum = 816), reflecting the need to align acquisitions with sustainability goals. Integration planning also scores high (mean value = 3.85, sum = 812), showing the role of ESG in maintaining governance and standards post-merger. Synergy estimation (mean value = 3.82, sum = 805) shows ESG's growing role in evaluating sustainability-driven synergies. Valuation (mean value = 3.77, sum = 796) and deal structuring (mean value = 3.79, sum = 800) suggest that while ESG is relevant, it is less prominent than in earlier stages. Negotiations and finalizing the transaction (mean value = 3.73, sum = 788) rank slightly lower, indicating reduced focus on ESG in these financial and legal phases. Financing scores the lowest (mean value = 3.47, sum = 732), suggesting that ESG has less influence on securing financial resources.

5.2 Relationship between company size and location with the importance of ESG standards in M&A

In addition to examining the general role of ESG in M&A processes, it is crucial to understand how company-specific factors, such as size and geographic location, affect the perceived importance of ESG standards. Larger firms may have more established sustainability frameworks, while smaller firms may face different pressures or limitations in implementing ESG practices. Similarly, the geographic location of target companies, whether in developed markets, emerging economies, or specific regions like CEE, can significantly influence how ESG is prioritized during M&A. This section presents an analysis of how these variables impact the significance attributed to ESG standards throughout the M&A process, drawing from the data gathered in our survey.

Statistics shown in Table 4 provides a statistical summary of how the size and geographic location of target companies influence the perceived importance of ESG standards in M&A. The results demonstrate notable variations based on these factors, highlighting how different company characteristics shape the emphasis placed on ESG during M&A transactions.

Stage/aspect of the M&A process	Mean value	Median	Mode	Standard deviation	Minimum	Maximum	Sum	Coefficient of variation (%)
Target selection	3.87	4	4	0.92	1	5	816	23.67
Negotiations	3.73	4	4	0.97	1	5	788	26.11
Due diligence	3.89	4	4	0.95	1	5	820	24.40
Valuation	3.77	4	4	0.90	1	5	796	23.79
Synergy estimation	3.82	4	4	0.84	1	5	805	21.96
Deal structuring	3.79	4	4	0.92	1	5	800	24.35
Financing	3.47	4	4	0.87	1	5	732	25.04
Integration planning	3.85	4	4	0.99	1	5	812	25.66
Finalizing the transaction	3.73	4	4	0.92	1	5	788	24.77
Integration	3.83	4	4	0.95	2	5	809	24.78

Notes: Statistical summary of responses to the question: “What is the importance of ESG factors in a specific stage/aspect of the M&A process?” $N = 211$.

Table 3. Importance of ESG factors across different M&A stages (H3).

Source: Own elaboration.

For target size, ESG standards are seen as most important in M&A involving medium enterprises, with a mean score of 3.77 and a sum of 796, reflecting their balance between flexibility and structure. Large enterprises follow closely (mean value = 3.75, sum = 792), showing minimal difference in ESG relevance between medium and large firms. Small enterprises score lowest (mean value = 3.29, sum = 694), likely due to resource constraints and less external pressure. Regarding target location, emerging markets rank highest with a mean value of 4.15 (sum = 875), indicating heightened ESG importance due to increased environmental and social risks. The EU follows with a mean value of 4.14 (sum = 874), driven by stringent regulations. CEE (mean value = 4.09, sum = 862) and developed markets (mean value = 4.08, sum = 861) also show high ESG importance, while Poland scores slightly lower (mean value = 3.87, sum = 817), indicating notable but somewhat reduced emphasis on ESG.

In Table 5, we present the results of statistical tests assessing how firm size influences the importance placed on ESG factors across various stages of the M&A process. The p -values in the table indicate significant differences in how firms of different sizes (small, medium, large, and very large) prioritize ESG. While the table does not specify which firm size places greater or lesser importance on ESG, the statistical significance of the results suggests that firm size plays a critical role in the prioritization of ESG in M&A.

For target selection, due diligence, and integration planning, the p -values are highly significant (all < 0.001), indicating that firm size strongly affects how ESG factors

are incorporated during these stages. The same trend is observed for negotiations, synergy estimation, valuation, and deal structuring, where firm size influences the extent to which ESG considerations are integrated into the M&A process (all p -values < 0.001). However, in the financing stage, there is no significant difference across firm sizes (p -values above 0.05), suggesting that ESG factors do not play a central role in securing financing for M&A transactions, irrespective of company size.

It can be hypothesized that larger firms, due to their more extensive resources, greater regulatory scrutiny, and higher stakeholder expectations, are more likely to emphasize ESG throughout the M&A process, particularly in stages such as target selection, due diligence, and integration planning. These firms may have the capacity and external pressures to conduct more comprehensive ESG assessments and integrate sustainability into long-term corporate strategies. In contrast, smaller firms may face fewer external pressures or resource limitations, which could reduce their ability to prioritize ESG to the same extent. The results presented in Table 6 test this hypothesis and show the mean values for the importance of ESG factors across different stages of the M&A process, divided by firm size categories (small, medium, big, and very big). The results highlight how firms of varying sizes prioritize ESG considerations throughout the key stages of M&A.

For target selection, ESG importance increases with firm size, with small enterprises reporting a mean of 3.3 and very large enterprises 4.2, suggesting that larger firms prioritize ESG more due to stakeholder expectations and regulatory demands. A similar trend appears in

	Mean value	Median	Mode	Standard deviation	Minimum	Maximum	Sum	Coefficient of variation (%)
Target size								
Medium enterprises	3.77	4	4	0.76	1	5	796	20.13
Big enterprises	3.75	4	3	0.85	1	5	792	22.61
Small enterprises	3.29	3	4	0.96	1	5	694	29.03
Target location								
Emerging markets	4.15	4	4	0.64	1	5	875	15.47
EU	4.14	4	4	0.71	1	5	874	17.15
CEE	4.09	4	4	0.80	1	5	862	19.56
Developed markets	4.08	4	4	0.65	1	5	861	16.00
Poland	3.87	4	4	0.75	1	5	817	19.33

Notes: Statistical summary of responses to the question: “ESG standards are of great importance in mergers and acquisitions conducted by our organization when the acquisition/merger involves...” $N = 211$.

Table 4. Significance of ESG standards in M&A processes by target size and location (H4, H5).

Source: Own elaboration.

negotiations, where larger firms (mean value = 4.2) incorporate ESG more than smaller ones (mean value = 3.3). In due diligence, the importance rises from 3.2 for small firms to 4.1 for large firms, reflecting bigger firms' rigorous ESG assessments. For valuation, larger firms (mean value = 4.0) emphasize ESG more than smaller firms (mean value = 3.4), integrating sustainability into financial assessments. In synergy estimation, larger firms (mean value = 4.1) focus more on ESG than smaller firms (mean value = 3.3). The gap narrows in deal structuring, with small firms at 3.1 and

large firms at 3.7, indicating less critical importance of ESG. For financing, larger firms (mean value = 4.1) prioritize ESG more than smaller ones (mean value = 3.3), highlighting the relevance of sustainable finance. Integration planning shows a similar rise, from 3.3 for small to 3.8 for very large firms, indicating that ESG plays a bigger role in post-merger integration for larger companies. Finally, in finalizing the transaction, small firms rate ESG at 3.3 compared to 4.1 for large firms, showing that larger firms align final agreements more with sustainability goals.

Stage/aspect of the M&A process	<i>p</i> -values of tests					Is there a difference?
	Levene's test	ANOVA	Robust tests of equality of means (Welch)	Kruskal-Wallis	Levene's test	
Target selection	<0.001	<0.001	<0.001	<0.001	<0.001	Yes
Negotiations	<0.001	0.001	0.003	0.008	<0.001	Yes
Due diligence	<0.001	<0.001	<0.001	<0.001	<0.001	Yes
Valuation	<0.001	<0.001	<0.001	<0.001	<0.001	Yes
Synergy estimation	<0.001	0.004	0.009	0.057	<0.001	Yes
Deal structuring	<0.001	<0.001	<0.001	<0.001	<0.001	Yes
Financing	<0.001	0.028	0.037	0.118	<0.001	No
Integration planning	<0.001	<0.001	0.002	0.003	<0.001	Yes
Finalizing the transaction	<0.001	0.002	0.005	0.013	<0.001	Yes
Integration	<0.001	0.005	0.001	0.005	<0.001	Yes

Notes: Statistical summary of *p*-values from tests examining the influence of firm size on the importance of ESG factors across various stages of the M&A process. This analysis was conducted in relation to responses to the question: “What is the importance of ESG factors in a specific stage/aspect of the M&A process?” $N = 211$. Firm sizes: small enterprise (10–49 employees), medium enterprise (50–249 employees), large enterprise (250–999 employees), and very large enterprise (1,000 or more employees).

Table 5. Influence of firm size on ESG importance across M&A stages (H5, tested in relation to H3).

Source: Own elaboration.

	Small 27	Medium 85	Big 69	Very big 30
Target selection	3.3	3.7	4.1	4.2
Target selection	3.3	3.6	4.0	4.0
Negotiations	3.3	3.7	4.2	4.2
Due diligence	3.2	3.6	4.1	4.0
Valuation	3.4	3.7	4.0	4.0
Synergy estimation	3.3	3.6	4.1	4.1
Deal structuring	3.1	3.4	3.7	3.6
Financing	3.3	3.7	4.1	4.1
Integration planning	3.3	3.6	4.0	3.8
Finalizing the transaction	3.3	3.8	4.1	3.9

Notes: Mean values of responses to the question: “What is the importance of ESG factors in a specific stage/aspect of the M&A process?” $N = 211$. Firm sizes: small enterprise (10–49 employees), medium enterprise (50–249 employees), large enterprise (250–999 employees), and very large enterprise (1,000 or more employees).

Table 6. Mean importance of ESG factors across M&A stages by firm size (H5, tested in relation to H3).

Source: Own elaboration.

In Table 7, we provide evidence on how firm size affects perceptions of ESG's importance in various M&A benefits. For synergies, significant p -values (ANOVA = 0.003) show that larger firms prioritize ESG as a key factor, likely due to greater integration challenges. Similarly, for identifying value, significant differences (ANOVA = 0.022) suggest that larger firms see ESG as crucial for long-term value creation, especially in sustainability-driven sectors. For reducing environmental compliance costs, larger firms (ANOVA = 0.005) consider ESG important for cost reduction due to broader regulatory obligations. ESG also plays a central role in improving governance efficiency during integration (ANOVA = 0.011) and in enhancing operational efficiency (ANOVA = 0.018). However, no significant differences were found for innovation (ANOVA = 0.180), indicating that ESG's role in innovation is consistent across firm sizes. Finally, larger firms (ANOVA = 0.015) view ESG as key for talent management, likely due to higher employee expectations for corporate responsibility.

Similar to previous analyses, we will now examine whether larger firms are more sensitive to ESG factors in relation to various benefits of the M&A process compared to smaller firms. This will help determine if firm size continues to play a significant role in shaping the prioritization of ESG considerations across different M&A benefits. Statistics concerning this issue are presented in Table 8. It presents the mean values for how

	p-values of tests				Is there a difference?	
	Levene's test	ANOVA	Robust tests of equality of means (Welch)	Kruskal-Wallis	Levene's test	
The ability to achieve synergies in merger and acquisition processes	<0.001	0.003	0.001	<0.001	<0.001	Yes
Identifying sources of value in merger and acquisition processes	<0.001	0.022	0.016	0.010	<0.001	Yes
Reducing costs of environmental compliance	0.018	0.005	0.005	0.002	0.018	Yes
High efficiency and quality of corporate governance during the integration phase of merged companies	0.011	0.011	0.012	0.007	0.011	Yes
Improving operational efficiency in merged companies	<0.001	0.018	0.017	0.007	<0.001	Yes
Increasing innovation in merged companies	0.005	0.180	0.138	0.112	0.005	No
Attracting (or retaining) talent in the merged/acquired companies	0.060	0.015	0.014	0.008	0.060	Yes

Notes: Statistical summary of p -values from tests examining the relationship between firm size and the importance of ESG standards for achieving various benefits in M&A transactions. Responses are based on the question: “ESG standards are of great importance for...”. $N = 211$. Firm sizes: small, middle, big, and very big.

Table 7. Influence of firm size on the importance of ESG benefits in M&A processes (H5, tested in relation to H2).

Source: Own elaboration.

<i>n</i>	Small 27	Medium 85	Big 69	Very big 30
The ability to achieve synergies in merger and acquisition processes	3.5	3.8	4.0	4.0
Identifying sources of value in merger and acquisition processes	3.5	4.0	4.1	4.0
Reducing costs of environmental compliance	3.5	3.9	4.1	4.1
High efficiency and quality of corporate governance during the integration phase of merged companies	3.5	3.8	4.0	3.9
Improving operational efficiency in merged companies	3.6	3.9	4.0	4.1
Increasing innovation in merged companies	3.6	4.0	4.1	4.1
Attracting (or retaining) talent in the merged/acquired companies	3.3	3.7	4.1	4.2
The ability to achieve synergies in merger and acquisition processes	3.5	3.8	4.0	4.0

Notes: Mean values of responses to the question: “ESG standards are of great importance for...” $N = 211$. Firm sizes: small enterprise (10–49 employees), medium enterprise (50–249 employees), large enterprise (250–999 employees), and very large enterprise (1,000 or more employees).

Table 8. Mean importance of ESG standards for achieving benefits in M&A by firm size (H5, tested in relation to H2).

Source: Own elaboration.

firms of different sizes perceive the importance of ESG standards in achieving specific benefits during the M&A process. The results show a clear trend: larger firms consistently attribute greater importance to ESG standards in realizing the various benefits associated with M&A compared to smaller firms.

For achieving synergies in M&A, small enterprises rate the importance of ESG at 3.5, medium firms at 3.8, and large and very large firms at 4.0. This suggests that larger firms, facing more complex integration processes, place

greater emphasis on ESG in driving synergies. For identifying value in M&A, small enterprises report 3.5, medium firms 4.0, and large firms 4.1, showing that larger firms view ESG as more critical for unlocking value, aligning with broader sustainability strategies. For reducing environmental compliance costs, small firms rate ESG at 3.5, medium firms 3.9, and large and very large firms 4.1, reflecting larger firms' greater focus on regulatory compliance. Corporate governance during integration scores 3.5 for small firms, 3.8 for medium, 4.0 for large, and 3.9 for

Stage/aspect of the M&A process	<i>p</i> -values of tests					Is there a difference?
	Levene's test	ANOVA	Robust tests of equality of means (Welch)	Kruskal-Wallis	Levene's test	
Target selection	0.191	0.419	0.086	0.437	0.191	No
Negotiations	0.047	0.231	0.013	0.226	0.047	No
Due diligence	0.114	0.470	0.111	0.500	0.114	No
Valuation	0.020	0.520	0.046	0.493	0.020	No
Synergy estimation	0.761	0.335	0.353	0.149	0.761	No
Deal structuring	0.094	0.574	0.631	0.518	0.094	No
Financing	0.878	0.273	0.317	0.261	0.878	No
Integration planning	0.115	0.389	0.090	0.378	0.115	No
Finalizing the transaction	0.121	0.996	0.976	0.993	0.121	No
Integration	0.302	0.448	0.458	0.439	0.302	No

Notes: Statistical summary of *p*-values from tests examining the relationship between acquirer ownership (domestic or with some portion of foreign capital) and the importance of ESG factors across various stages of the M&A process. Responses are based on the question: “What is the importance of ESG factors in a specific stage/aspect of the M&A process?” $N = 211$. Firm ownership: domestic or with some portion of foreign capital.

Table 9. Influence of acquirer ownership on ESG importance across M&A stages (H5, tested in relation to H3).

Source: Own elaboration.

	p-values of tests					Is there a difference?	
	Levene's test	ANOVA	Robust tests of equality of means (Welch)	Kruskal-Wallis	Levene's test		
The ability to achieve synergies in merger and acquisition processes	0.489	0.358	0.425	0.148	0.489	No	
Identifying sources of value in merger and acquisition processes	0.090	0.783	0.840	0.528	0.090	No	
Reducing costs of environmental compliance	0.135	0.682	0.714	0.476	0.135	No	
High efficiency and quality of corporate governance during the integration phase of merged companies	0.131	0.632	0.649	0.518	0.131	No	
Improving operational efficiency in merged companies	0.213	0.926	0.916	0.896	0.213	No	
Increasing innovation in merged companies	0.195	0.661	0.724	0.305	0.195	No	
Attracting (or retaining) talent in the merged/acquired companies	0.018	0.773	0.833	0.390	0.018	No	

Notes: Statistical summary of *p*-values from tests examining the relationship between acquirer ownership (domestic or with some portion of foreign capital) and the importance of ESG standards for achieving various benefits in M&A transactions. Responses are based on the question: "ESG standards are of great importance for..." *N* = 211. Firm sizes: small, middle, big, and very big.

Table 10. Influence of acquirer ownership on the importance of ESG benefits in M&A processes (H5, tested in relation to H2).

Source: Own elaboration.

very large firms, suggesting ESG's key role in maintaining governance standards, though very large firms may face challenges. In operational efficiency, small firms rate ESG at 3.6, medium firms 3.9, and large and very large firms 4.0 and 4.1, respectively, indicating that larger firms see ESG as a driver of efficiency. For innovation, small firms rate ESG at 3.6, medium firms 4.0, and large and very large firms 4.1, highlighting its importance in fostering innovation. Finally, for attracting or retaining talent, small firms rate ESG at 3.3, medium firms 3.7, and large and very large firms 4.1 and 4.2, showing that larger firms increasingly rely on ESG to meet employee expectations for corporate responsibility. These differences highlight that the specific dimensions of ESG play varying roles in M&A outcomes: the Environmental dimension is particularly significant for reducing compliance costs, especially in larger firms that face stricter regulatory scrutiny; the Social dimension drives talent attraction and retention, with larger firms relying more on ESG to meet heightened employee expectations; and the Governance dimension ensures robust integration processes and operational efficiency, which are increasingly important for larger firms managing more complex M&A transactions.

Similarly, we tested the impact of ownership structure – whether the acquirer is domestically owned or has some portion of foreign capital – on the perception of the importance of ESG in different stages of the M&A process and related benefits. We show statistics concerning this issue in Table 9.

The results in Table 9 indicate no significant differences between domestic and foreign-owned firms in how they perceive the importance of ESG at any M&A stage; all *p*-values are above significance thresholds. This suggests that ownership structure does not influence ESG prioritization during target selection, due diligence, or integration planning.

Similarly, Table 10 shows no statistically significant differences in how ownership affects the perceived importance of ESG for key M&A benefits, including synergies, environmental compliance, and operational efficiency. The only partial exception appears in talent attraction and retention (Levene's test *p* = 0.018), though other tests do not confirm significance. Overall, ownership structure does not materially shape how firms evaluate ESG in relation to M&A outcomes.

6. Discussion

The empirical findings in this study provide robust evidence supporting the proposed hypotheses, with significant implications for understanding the role of ESG in

M&A processes. The results not only align with existing literature but also highlight new insights into how firm characteristics, stakeholder groups, and regulatory frameworks shape the integration of ESG standards in M&A transactions.

6.1 Stakeholders and ESG

H1 (the first hypothesis) posited that “the importance of ESG factors is expected to vary across different stakeholder groups in the M&A process.” The data confirm this, as equity capital providers emerge as the most affected group, followed by employees and the firm’s public image. This is consistent with the literature emphasizing that investors and financial stakeholders often prioritize ESG due to its potential for long-term value creation and risk mitigation (Pástor et al., 2021; Pedersen et al., 2021). The slightly lower importance placed on clients and suppliers suggests that these groups may have more operational rather than strategic concerns, aligning with Soana (2024) findings that ESG-driven initiatives are often more critical for financial stakeholders.

6.2 Synergies and benefits in M&A

H2 (the second hypothesis) suggested that “the integration of ESG standards will positively influence the realization of benefits in M&A transactions, though the distribution of these benefits is expected to be uneven.” The analysis supports H2, showing that ESG standards are particularly important for attracting and retaining talent, reducing environmental compliance costs, and enhancing governance. These findings are in line with studies by Kim et al. (2022) and Zheng et al. (2023), who demonstrated that ESG engagement improves post-M&A performance and enhances synergy realization. The uneven distribution of benefits is evident, with operational efficiency and innovation receiving lower mean scores compared to talent and governance-related benefits. This suggests that while ESG integration offers broad advantages, its impact is more pronounced in areas directly tied to regulatory and reputational concerns, corroborating (Barros et al., 2022) findings on the varying significance of ESG across different business functions. Notably, the social dimension of ESG appears most influential in talent management, the environmental dimension drives cost efficiencies and regulatory compliance, while the governance dimension plays a central role in enhancing integration and decision-making quality.

6.3 ESG and M&A stages

H3 (the third hypothesis) proposed that “the importance of ESG factors will vary across different stages of the M&A process.” The data clearly show that due diligence and target selection are the stages where ESG factors are most heavily weighted, aligning with the literature that emphasizes the critical role of ESG in risk identification and alignment with sustainability goals (Manteuffel, 2024). Conversely, stages like financing and deal structuring see lower ESG prioritization, which might reflect the dominance of financial metrics during these phases. This supports H3, confirming that ESG plays a more significant role in certain M&A stages, especially those involving risk mitigation and long-term strategic planning.

6.4 Geographic influence on ESG in M&A

H4 (the fourth hypothesis) stated that “the geographic location of the target company significantly affects the importance of ESG in M&A processes.” The results show that ESG standards are deemed most important in emerging markets, followed by the EU. These findings are consistent with the literature on regulatory differences, which suggest that ESG is more critical in regions with less robust governance frameworks or stricter regulatory environments, such as the EU (Csapi et al., 2024; Gafni et al., 2024). These results support H4, further underscoring the role of geographic context in shaping ESG priorities during M&A.

6.5 Moderating role of firm size (not ownership)

Finally, H5 (the combined fifth hypothesis) predicted that “firm size and ownership structure are expected to moderate the importance of ESG in M&A processes.” The data confirm that larger firms place more emphasis on ESG across all stages of M&A, particularly in areas like target selection, due diligence, and integration planning. This supports prior findings that larger firms are more likely to prioritize ESG due to regulatory scrutiny and stakeholder expectations (Caiazza et al., 2021; Manteuffel, 2024). However, the analysis also shows that ownership structure (domestic vs foreign) does not significantly affect ESG prioritization, except in the area of talent management. This suggests that while size is a critical moderating factor, ownership structure plays a more limited role.

7. Conclusion

This study confirms the growing importance of ESG standards in M&A, demonstrating their critical role across transaction stages, stakeholder groups, and firm sizes. The findings show that ESG is increasingly embedded in M&A strategies, especially in talent management, governance, and environmental compliance, and that its three dimensions contribute differently to outcomes: the social dimension supports talent attraction and retention, the environmental dimension reduces compliance costs and improves efficiency, and the governance dimension strengthens integration quality and strategic alignment. The study provides empirical evidence that firm size and geographic location condition ESG integration, extending prior research that links ESG not only to financial performance but also to synergy creation and risk mitigation. At the same time, the uneven distribution of ESG-related benefits indicates the need for further research on ESG's influence on innovation and operational efficiency, which received less emphasis in this study.

For practitioners, the results highlight the importance of incorporating ESG into M&A strategies, particularly in early stages like due diligence and target selection. Larger firms, in particular, should prioritize ESG to meet stakeholder expectations and regulatory pressures, especially in emerging markets where ESG risks are higher. ESG integration is also essential for attracting talent, improving governance, and reducing environmental compliance costs. Managers should recognize ESG's potential to create long-term synergies.

While ESG can drive significant benefits, such as improved stakeholder relationships and enhanced governance, it also introduces challenges, particularly in terms of regulatory compliance. Firms, especially smaller ones, may face administrative and financial burdens associated with meeting stringent ESG requirements. Managers should proactively plan for these costs and invest in resources to streamline compliance processes, ensuring that ESG strategies align with both regulatory demands and organizational capacities.

The findings also highlight the dual role of ESG as both a driver of sustainability and a regulatory burden for companies. While robust ESG regulations, such as those in the EU, have driven greater transparency and alignment with sustainability goals, they also impose significant compliance costs and administrative challenges. Smaller firms, in particular, may struggle to allocate sufficient resources to meet these demands, increasing the risk of inefficiencies or unintended consequences, such as greenwashing.

Policymakers should consider these burdens when designing ESG frameworks, ensuring that regulations remain effective without disproportionately affecting resource-constrained companies. Flexible approaches, such as phased implementation or differentiated requirements based on firm size or industry, could help mitigate these challenges.

Future research could explore ESG's long-term impact on post-M&A performance, particularly in smaller firms with resource constraints. Examining the role of industry-specific ESG factors and how they shape M&A outcomes would provide additional insights for managers operating in sectors with unique sustainability challenges. Moreover, future studies could explore compliance costs and administrative challenges created by ESG, especially for smaller firms.

This study has limitations. Its focus on Warsaw Stock Exchange-listed firms limits generalizability, while reliance on self-reported data may introduce bias. Despite these limitations, the findings provide a strong foundation for further exploration of ESG's role in M&A.

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Author contributions

Mariusz-Jan Radło: conceptualization; methodology; research design; coordination of the entire study; supervision; literature review; data interpretation; writing – original draft; writing – review & editing. Tomasz M. Napiórkowski: methodology; quantitative research coordination (CATI/CAWI); data curation; formal statistical analysis; visualization; writing – review & editing. Justyna Zabawa: contribution to research design; support in literature review; consultation on data interpretation; validation; writing – review & editing. Ewa Łosiewicz-Dniestrzańska: contribution to research design; consultation on methodological choices; support in data interpretation; validation; writing – review & editing.

Conflict of interest statement

Authors state no conflict of interest.

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