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The mediating role of greenwashing behaviour in the relationship between acquirers' ESG performance and long-term M&A performance: Evidence from Chinese listed firms

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ABSTRACT

The study investigates the impact of acquirers' environmental, social, and governance (ESG) performance on long-term mergers and acquisitions (M&A) performance, along with the mediating role of greenwashing behaviour. The study explores how ESG performance affects post-acquisition success directly or indirectly through its influence on greenwashing. A quantitative archival research design was used by analysing panel data from 777 acquiring firms listed on the Shenzhen and Shanghai Stock Exchanges between 2009 and 2022, resulting in 1,689 firm-year observations. Environmental, social, and governance performance was assessed using established environmental, social, and governance ratings, while greenwashing behaviour was measured through the discrepancy between standardised environmental disclosure and environmental performance scores. The results reveal that ESG performance does not significantly impact long-term M&A outcomes. Contrary to expectations, ESG performance positively impacted greenwashing behaviour, which means that firms with stronger ESG reputations may carry out sustainability communication that exceeds their environmental performance. Greenwashing behaviour was not found to significantly impact long-term M&A outcomes, and no mediating effect was found. The study makes a contribution to existing ESG and M&A literature by challenging the assumption that ESG performance translates into better acquisition outcomes. This relationship between ESG ratings, sustainability disclosure practices, and post-merger performance was also highlighted in the Chinese context. The practical implications are that regulators should strengthen verification of environmental, social, and governance disclosures, while investors and managers should avoid relying solely on environmental, social, and governance ratings when assessing the long-term value potential of mergers and acquisitions.

Contribution/Originality: This study makes a novel contribution to existing ESG and M&A literature by analysing greenwashing as having a mediating effect on the impact of acquirers' ESG performance on long-term M&A performance. The findings provide new evidence from Chinese listed firms and challenge assumptions that stronger ESG performance necessarily leads to superior post-acquisition outcomes.

1. INTRODUCTION

Environmental, social, and governance (ESG) considerations have acquired increased importance in organisational decisions since investors, regulators, and other stakeholders are expecting greater sustainability. ESG has evolved from being an indicator of environmental and social performance to a strategic asset that influences organisational reputation, investor confidence, access to capital, and long-term value creation (Gherghina, 2024). The implication is that authentic ESG is not limited to boosting the reputation of an organisation but also its value through stakeholder confidence. On the other hand, mergers and acquisitions (M&As) are also strategic tools for market expansion, growth, and developing competitive advantage (Noor, Hayat, Juniar, Zulelli, & Hadi, 2025). M&As are therefore used by corporations to increase value. The relationship between ESG and M&As is shaped by corporate behaviour in creating and increasing value, thereby linking M&A decisions to sustainability expectations as well.

The increasing focus on ESG is evident in China, where government regulations are being strengthened to encourage responsible business practices. Sustainable development has become a guiding factor of national policy, which has resulted in greater scrutiny and stricter disclosure requirements for environmental and social performance. The Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) have also adopted the approach of "double materiality", which requires listed businesses to report the environmental impact of their activities and also the impact of environmental factors on their organisations (Lee, 2024). This will result in greater transparency in emissions under Scopes 1, 2, and 3, along with their carbon offsets and climate risk mitigation strategies. The regulations increased ESG reporting among listed firms to 38.9% in 2024, which was an increase of 6% from the previous year (RSM, 2024). These regulatory steps and outcomes are aligned with the green transition rules, which target a shift to a green, circular, low-carbon economy by 2035. Simultaneously, China is going through a transformative phase because there is a drive to eliminate financial misconduct and enhance sustainable development. The "Nine New Guidelines of the State Council" encourage listed enterprises to carry out mergers and acquisitions (M&As) and restructuring to improve development quality, which resulted in 1,189 M&A deals until November 2024 (Chambers, 2024). The drive to expand through M&As and the focus on ESG reporting can put pressure on enterprises to make disclosures symbolic and not reflective of true performance, which reflects greenwashing behaviour. These regulatory and market developments have increased academic interest in understanding whether ESG performance contributes to successful M&A outcomes.

Existing literature highlights the different ways by which ESG performance can create value. Kulova and Nikolova-Alexieva (2023) stated that ESG strategies can develop stakeholder trust, attract investments, and allow for capital to be accessed more affordably. This is because ESG performance is a significant indicator of an organisation's long-term viability and ethical conduct. However, the advantages of ESG performance can be adversely affected through M&As. This is because M&As are characterised by information asymmetry, uncertainty, and divergence in expertise, which can lead to integration challenges (García-Nieto, Bueno-Rodríguez, Ramón-Jerónimo, & Flórez-López, 2024). Acquisition of firms with strong ESG performance can result in perceptions of long-term stability and sustainable value creation among stakeholders. The potential for value creation and stakeholder satisfaction can drive post-acquisition integration, which can improve long-term performance.

However, despite growing research on ESG performance, there are inadequate studies on long-term performance in the context of M&As. Current literature focuses mainly on short-term market actions and reactions while ignoring how greenwashing can affect performance in the long term in consolidated firms. These perspectives provide important insights, but there is inadequate understanding of the long-term consequences of sustainability-related corporate performance following M&A transactions. The success of M&As depends on the ability of acquiring firms to create value sustainably after integration, which is relevant for stakeholders in the long term. The gap in research on long-term post-merger ESG performance affects understanding of how ESG performance leads to the success of acquisitions, which can also impact stakeholders' perceptions of M&As. M&As add another dimension to ESG performance because there can be issues in the integration of acquired firms owing to a mismatch in capabilities. Another limitation in existing research is related to the increase in greenwashing behaviour. Koch and Denner (2025) defined greenwashing behaviour as the mismatch between the claims of organisations and their actual practices, to make the products, services or processes project greater environmental friendliness than they actually are. As stakeholder expectations of sustainability increase, corporations face greater pressure to demonstrate positive environmental and social performance. Some firms can exaggerate their social and environmental performance, or they can implement selective disclosures, which do not reflect their actual performance. This is because greenwashing allows organisations to benefit from stakeholder trust and growth without accepting the costs of social and environmental transformation. However, these benefits last only in the short term, with risks of reputational damage, unsustainable growth, and stakeholder mistrust in the long term. Increasing disclosure expectations have also raised concerns regarding the credibility of sustainability reporting. This has resulted in greenwashing emerging as an important issue in ESG research.

The possibility of greenwashing complicates the relationship between ESG performance and long-term M&A performance. Investors, regulators, and stakeholders rely on ESG disclosures as signals of long-term stability and sustainability of organisations. When ESG reports accurately provide information about the performance and capabilities of organisations, they result in long-term stakeholder support. On the other hand, when corporations engage in greenwashing, stakeholders can be deceived about the long-term potential of the organisation. In the long term, misleading claims about environmental and social performance can result in reduced trust, damaged reputation, increased regulatory scrutiny, and an overall reduction in the expected benefits of positive ESG performance. Research can help in understanding how greenwashing can affect the ESG performance of firms in the long term after M&A. Limited attention has been given to the influence of ESG performance on long-term M&A performance, especially regarding the role of greenwashing in the relationship. Existing research has focused on ESG performance, greenwashing, and M&A outcomes as separate phenomena. This gap in research is significant because it limits understanding of whether long-term M&A performance is an outcome of a genuine sustainability focus or favourable claims communicated to stakeholders. The examination of greenwashing as a mediating mechanism is important because it can offer greater insight into how ESG performance translates to long-term M&A performance. Due to these theoretical and practical concerns, the Chinese context is important for examining the relationship among ESG performance, greenwashing behaviour, and long-term M&A performance.

The importance of studying these factors in the context of China is the recent development in ESG reporting and M&A activities. China has witnessed increased regulatory attention to transparency in sustainable development, which has resulted in improved ESG reporting (RSM, 2024). The SSE and the SZSE have also tightened regulations requiring listed firms to report on both their impacts on the environment and the environment's impact on them (Lee, 2024). The impact of these developments is significant for listed firms that engage in M&As because the regulations and ESG reporting are applicable to the integrated business after acquisition. The trend of M&As is also unlikely to slow down because it is supported by state policy (Chambers, 2024). The combined effect of the regulatory factors is that Chinese listed firms are engaging extensively in M&A activities while also experiencing pressure to present themselves as environmentally and socially responsible. This may or may not encourage firms to engage in greenwashing, but it is important to understand how greenwashing can affect how ESG performance impacts long-term M&A performance. The context of listed companies on the SSE and SZSE can help to examine how ESG performance contributes to long-term M&A success and whether greenwashing behaviour impacts this relationship. This is because M&As can affect performance through post-acquisition integration and synergy alignment. To address these gaps, this study analyses the mediating role of greenwashing behaviour in the influence of acquirers' ESG performance on the long-term M&A performance of firms listed on the SSE and SZSE using the theoretical lenses of signal transmission theory, stakeholder theory, and the resource-based view.

Three theoretical perspectives have been used to develop a framework for understanding the relationships between the variables. Signal transmission theory shows how firms use ESG performance as a signal of organisational quality and future value when limited information is available (Gangi, Varrone, Ossorio, Daniele, & Coscia, 2026). This can influence the expectations of investors and other stakeholders regarding post-acquisition performance. Stakeholder theory holds that authentic ESG practices improve stakeholder trust, legitimacy, and organisational support, whereas greenwashing can undermine these relationships because of mismatches between ESG claims and actual sustainability performance (Ma, Pan, & Suardi, 2024). The resource-based view (RBV) holds that sustainability-related capabilities may make up valuable, rare, and inimitable strategic resources that result in sustainable competitive advantage (Merter & Balcıoğlu, 2026). This can contribute to long-term M&A success through unique capabilities that are evident in ESG reporting. Together, these theoretical lenses provide the conceptual framework for examining the direct impact of acquirers' ESG performance on long-term M&A performance, and the indirect impact of greenwashing behaviour.

This study makes theoretical and practical contributions to ESG and M&A literature by integrating ESG performance, greenwashing behaviour, and long-term M&A performance into a unified framework. In contrast to existing studies, which generally assume that ESG performance leads to improved acquisition outcomes, this study shows that this relationship is more complex and may not be direct, particularly in the case of listed firms in China. Practically, the findings provide important implications for regulators, investors, and corporate managers by highlighting the importance of verifying ESG disclosures instead of relying solely on ESG ratings.

The study aims to analyse the relationship between ESG performance and long-term M&A performance among Chinese firms listed on the SSE and the SZSE, and to investigate whether greenwashing mediates this relationship.

The following are the research objectives of the study.

- To examine the relationship between ESG performance and long-term M&A performance.
- To investigate the relationship between ESG performance and greenwashing behaviour.
- To analyse the relationship between greenwashing behaviour and long-term M&A performance.
- To evaluate the mediating role of greenwashing behaviour in the relationship between ESG performance and long-term M&A performance.

The research questions are as follows:

- What is the relationship between ESG performance and long-term M&A performance?
- What is the relationship between ESG performance and greenwashing behaviour?
- What is the relationship between greenwashing behaviour and long-term M&A performance?
- How does greenwashing behaviour mediate the relationship between ESG performance and long-term M&A performance?

2. LITERATURE REVIEW

2.1. Theoretical Framework

The relationships between ESG performance, greenwashing behaviour, and long-term M&A performance can be understood through the theoretical lenses of signalling theory, stakeholder theory, and resource-based view. Gangi et al. (2026) explained signalling theory in terms of decision-makers leveraging signals to manage uncertainty in situations where information was distributed asymmetrically. This can explain how the lack of complete transparency or complete verifiability of company claims can lead investors to rely on reported ESG performance and M&A intentions to predict long-term performance outcomes. This implies that ESG performance has to be taken at face value by assuming no greenwashing has taken place. This means that the absence of evidence of greenwashing, positive ESG performance, and M&A with target firms that have high ESG performance can create situations where stock prices increase, or green credit is offered at favourable terms. In this study, signalling theory explains how firms use ESG disclosures to communicate organisational quality and long-term value to investors and other stakeholders under conditions of uncertain information.

The stakeholder theory conceptualises organisations as interconnected networks among various stakeholders who share a commitment to organisational success (Ma et al., 2024). Strong ESG performance develops stakeholder trust, while greenwashing destroys it. Acquiring firms with higher ESG performance can be understood as involving expert stakeholders to improve long-term M&A performance, which can increase the wealth of shareholders, who are also stakeholders. Stakeholder theory is relevant to this study because it explains how authentic ESG practices strengthen stakeholder trust and legitimacy. However, greenwashing can undermine these relationships and ultimately affect long-term M&A performance.

The resource-based view (RBV) states that firms try to acquire resources that are valuable, rare, and inimitable to develop sustainable competitive advantage (Merter & Balcıoğlu, 2026). This implies that M&A activities are also intended to acquire valuable, rare, and inimitable resources to achieve competitiveness in terms of sustainability, which can result in improved long-term performance. These three theories can explain corporate behaviour in terms of ESG performance, greenwashing, and long-term M&A performance. RBV provides the theoretical basis for understanding ESG capabilities as valuable strategic resources that enhance competitive advantage and support superior long-term performance following M&As.

Together, these three theoretical perspectives provide the conceptual foundation for the study. Signalling theory explains how ESG information is communicated to the market, stakeholder theory clarifies how stakeholders perceive and respond to that information, and the resource-based view explains how ESG capabilities contribute to sustainable competitive advantage. Together, they shape the proposed relationships among ESG performance, greenwashing behaviour, and long-term M&A performance and provide the theoretical rationale for the hypotheses developed in the following sections.

2.2. ESG Performance and Long-Term M&A Performance

According to RBV, superior ESG performance reflects valuable organisational capabilities that enhance firms' ability to create and sustain competitive advantage. ESG-related resources, including effective environmental management, strong governance structures, and positive stakeholder relationships, are difficult for competitors to imitate and can improve post-merger integration, operational efficiency, and long-term value creation (Merter & Balcıoğlu, 2026). Complementing this perspective, signalling theory suggests that better ESG performance can be seen as a credible signal of organisational quality and lower investment risk, given the limited availability of information, which increases investor confidence and enhances market perceptions of acquisition success (Gangi et al., 2026). Together, these theoretical perspectives suggest that organisations with better ESG performance can achieve better long-term M&A performance.

ESG performance has become increasingly important as an indicator of organisational competitiveness and value creation in the long term. Lin (2024) found that ESG performance can result in long-term value creation through business model transformation and financial performance optimisation. ESG strategies were also found to create new opportunities for business in the form of sustainable supply chain development and green finance. The implication for businesses is that ESG makes the business more valuable in the long term and also leads to greater opportunities for value creation. Xu, Li, Chen, Huo, and Kuang (2024) argued that ESG practices help companies to achieve sustainable competitiveness through corporate resilience in the form of reduced liquidity risk, greater information disclosure quality, and diminished financing costs. This implies that ESG makes organisations competitive because of the ease of access to finance, which makes it easier for them to grow, while information disclosure quality can support the confidence of stakeholders, which reduces the risk of liquidity because of long-term sustainability. However, the study had no focus on M&A performance directly. On the other hand, Fang and Guo (2025) believed that ESG practices contribute to long-term corporate value and enhanced competitiveness by improving the social image and brand value of organisations. This requires investments in environmental and social aspects, which can put strain on a company's financial position in the short term, but it translates to long-term growth because investors consider ESG parameters in decision-making processes related to investment. Minev, Dankova, and Štrukelj (2025) agreed that organisations with strong ESG practices have better performance during economic downturns. This is because excellence in ESG makes organisations resilient to disruptions, which allows them to generate high value in the long term despite costs in the short term. The study analysed ESG Risk Ratings to reach its conclusions, but there was no study of M&A performance. However, Clément, Robinot, and Trespeuch (2025) cautioned that there is a lack of consensus about the definition of ESG and the metrics to be measured to assess it. This is because ESG represents multiple issues, and it may not be possible to track specific social and environmental issues in overall performance. But government regulations provide significant guidance on ESG reporting, which can be used as a starting point to make businesses accountable for their impact. Therefore, ESG practices generally contribute to long-term value creation and greater competitiveness of organisations through improved reputation and resilience.

ESG denotes sustainability, which can have a positive influence on long-term M&A performance after the integration of acquired firms. Zou, Wang, and Zhao (2025) concluded that the ESG performance of the acquiring firms has a positive influence on the long-term outcomes of cross-border M&As. Strong ESG practices can help acquiring firms signal respect for the ethics and stakeholders of the local country and help them gain legitimacy. Galavotti and Depperu (2026) defined ESG divergence as the distance between the ESG profiles of the acquiring and target firms and stated that a larger distance can adversely affect ESG outcomes after M&A. This means that the ESG performance of both the acquiring organisation and the target organisation is responsible for long-term M&A performance, but the authors suggested avoiding full ownership structures since they can suppress the target firm's ESG capabilities. Gupta, Kashiramka, and Singh (2025) found a direct link between high ESG ratings of acquiring firms and strong performance after cross-border M&A, especially when the host country has a sustainability-oriented institutional environment. However, the gap in the study is that it did not consider M&As within the same country. There can be rewards in the form of high returns when cross-border M&As are announced by firms with high ESG scores. The implication is that stakeholders trust the decisions of companies that are rated high on ESG, and this leads to M&A activities being perceived positively. This can be seen as long-term value creation in terms of shareholder wealth. Pai (2025) suggested that ESG considerations drive M&A strategies because firms try to improve their long-term performance. One of the benefits of maintaining good ESG performance is better bargaining power during M&A negotiations. It implies that firms are interested in maintaining long-term ESG performance before identifying target firms. However, the study assumed that acquiring firms always search for target firms that have higher ESG performance, which is adopted by the acquirer to improve its performance in the long term. However, Gigante, Galli, and Scarlini (2025) argued that the long-term economic performance after M&A depends on the ESG of the target firm, which helps the acquiring firm to improve its performance. But this study focused on the role of ESG performance of organisations targeted to be acquired, which means that the importance of the ESG performance of the firm acquiring another organisation was ignored. Despite the generally positive evidence, the existing literature exhibits several limitations. Several studies examine the influence of ESG performance on overall firm performance and ignore post-acquisition performance, which limits their applicability to M&A contexts. Existing research has also broadly focused on short-term performance, with less attention given to the long-term M&A performance of acquiring firms. The ESG performance of acquiring firms is a significant factor in determining long-term performance. Therefore, based on the findings of existing literature, RBV, and signalling theory, the hypothesis can be framed as follows:

H_1: The ESG performance of acquiring firms has a positive impact on long-term M&A performance.

2.3. ESG Performance and Greenwashing Behaviour

Signalling theory can explain how ESG disclosures are signals that firms use to convey their ESG performance to investors and other stakeholders (Gangi et al., 2026). However, when firms mislead stakeholders through ESG reports without corresponding substantive actions, the credibility of these signals is reduced. This can be understood as greenwashing behaviour. Stakeholder theory holds that firms try to ensure legitimacy and stakeholder support through ESG reporting (Ma et al., 2024). As stakeholder expectations regarding sustainability increase, firms can face greater pressure to achieve better ESG performance, which can encourage symbolic ESG disclosures instead of genuine sustainability improvements.

The increase in regulations on ESG reporting has led to greater transparency in the operations of organisations, but there is a possibility that organisations can be incentivised to engage in greenwashing by exaggerating their social and environmental achievements. Spaniol, Danilova-Jensen, Nielsen, Rosdahl, and Schmidt (2024) stated that the definitions of greenwashing include the aspects that they are claims made by firms which are deceptive and unsubstantiated and made to obtain a competitive advantage for the firm. These definitions of greenwashing predominantly focus on environmental aspects, but some researchers also state that greenwashing is associated with social issues. Lee and Raschke (2023) opined that organisations with poor ESG have a greater tendency to engage in greenwashing behaviour than firms with better ESG performance. This means that positive ESG performance develops the trust of stakeholders, and organisations do not take advantage of this trust by implementing greenwashing. Conversely, it also means that greenwashing is carried out by firms when their ESG performance does not inspire the confidence of stakeholders, and they exaggerate their environmental and social performance to enhance their reputation. Bu et al. (2024) suggested that improvements in ESG performance were a mechanism to reduce greenwashing. This is because ESG assurance significantly inhibits greenwashing behaviour. This positive impact of ESG performance is effective even when legal factors are weak, pointing to the power of corporations to refrain from greenwashing even when legal consequences are unlikely. However, the study did not examine greenwashing in the case of M&A performance. Poiriazi, Zournatzidou, Konteos, and Sariannidis (2025) agreed that ESG strategies counteract greenwashing behaviour because of strong governance and transparency. Directors have to ensure that the claims made by organisations are accurate, which results in effective supervision so that greenwashing does not reduce the credibility of their authentic initiatives. However, the study focused only on one company as a case study. Gunawan, Gunawan, and Liu (2023) stated that the very purpose of ESG assessments is to avoid misleading activities like greenwashing. The authors pointed out that ESG assessment agencies have robust standards that can minimise greenwashing behaviour, which can benefit internal and external stakeholders by supporting informed investment decisions. Therefore, it can be said that high ESG performance leads to lower possibilities of greenwashing.

However, low ESG performance can be linked to a high tendency for greenwashing behaviour. Frendy, Oshika, and Koike (2024) found that organisations with low environmental performance are more likely to demonstrate greenwashing behaviour. The study was conducted in Japan, where a majority of directors had low confidence in their ESG strategies. This demonstrates how the environmental aspect of corporate governance can perform poorly, leading to a greater tendency towards greenwashing. This research examined Japanese listed firms, but there was no focus on the context of M&A performance. Janik and Ryszko (2026) agreed that businesses with poor sustainability performance rely on misleading communication in their reports. The authors defined greenwashing in terms of the mismatch between ESG disclosure and actual ESG performance. It implies that greenwashing is implemented when ESG performance is poor and cannot be communicated to stakeholders. However, Bams and van der Kroft (2022) countered that ESG ratings have an inverse relationship with sustainable performance because promises of sustainable improvements take several years to implement. This creates a new problem in the perception of greenwashing because commitments are not the same as actions, and delays in actions cannot be considered misleading to stakeholders. However, the study focused on inflation in ESG ratings and not on the tendency for greenwashing behaviour, which means that the findings cannot be generalised. Drawing on signalling theory and stakeholder theory, firms with stronger ESG performance may experience greater incentives to communicate their sustainability achievements. However, these incentives may also increase the likelihood of symbolic ESG disclosures when firms attempt to meet stakeholder expectations without fully implementing substantive sustainability practices. Based on these theoretical perspectives and the existing literature, the following hypothesis can be proposed.

H_2: Acquirers' ESG performance negatively impacts greenwashing behaviour.

2.4. Greenwashing Behaviour and Long-Term M&A Performance

Stakeholder theory can explain the relationship between greenwashing behaviour and long-term M&A performance. The theory holds that firms depend on the trust and support of stakeholders to achieve legitimacy and sustainable value creation (Ma et al., 2024). Greenwashing adversely impacts this trust by creating a mismatch between firms' ESG claims and their sustainability performance in reality. This damages corporate legitimacy and stakeholder relationships. Signalling theory suggests that misleading ESG disclosures reduce the credibility of corporate signals, which reduces investor confidence and increases uncertainty about a firm's long-term prospects (Gangi et al., 2026). Therefore, greenwashing can negatively influence firms' long-term M&A performance.

Greenwashing involves misleading stakeholders about sustainability performance and ignoring sustainability concerns, which can have adverse impacts on the long-term performance of combined firms after M&A. Yang and Ma (2026) found that long-term returns in M&A are achieved by mitigating greenwashing. This is because symbolic commitments cannot support performance in the long term. Another factor is that when commitments are perceived as greenwashing, this can damage reputation and also result in synergies between the acquiring organisations and the target organisations failing to be realised. Nguyen, Michayluk, Van de Venter, and Walker (2026) argued that firms with greenwashing behaviour often target acquiring firms with higher ESG ratings and reduce their greenwashing after the deal, resulting in improved long-term performance. This demonstrates that greenwashing must be avoided to ensure long-term performance, whether before or after the M&A activity. On the contrary, Chen, Ma, Wu, and Hao (2026) found that greenwashing can also exist in overstating the green credentials of M&A activities to signal a green transformation. This is mostly done to obtain favourable green credit, but this may not reflect the potential of the M&A. However, the study agreed that this kind of greenwashing also limits the potential for long-term value creation. Existing research has primarily examined the financial consequences of greenwashing in terms of market value, reputation, or investor reactions. Comparatively fewer studies have explored its influence on long-term post-acquisition performance. Moreover, the majority of existing evidence is derived from Western markets, limiting its generalisability to China's institutional environment. Based on stakeholder theory and signalling theory, together with the existing literature, this study proposes that greenwashing behaviour adversely affects firms' long-term M&A performance. Accordingly, the following hypothesis is proposed.

H_3: Greenwashing behaviour negatively impacts long-term M&A performance.

The proposed mediating role of greenwashing behaviour can be understood by integrating the Resource-Based View, signalling theory, and stakeholder theory. RBV suggests that ESG capabilities constitute strategic organisational resources that enhance firms' long-term competitive advantage (Merter & Balcıoğlu, 2026). On the other hand, signalling theory can explain how firms communicate these capabilities through ESG disclosures, which may not always reflect their actual sustainability performance (Gangi et al., 2026). When firms engage in greenwashing by communicating misleading ESG achievements, the credibility of the signals about their long-term prospects is reduced. Stakeholder theory also suggests that stakeholders respond to ESG disclosures and to their credibility and authenticity. Greenwashing may reduce stakeholder trust and legitimacy, which can reduce the benefits that genuine ESG capabilities would otherwise generate (Ma et al., 2024). Together, these theories indicate that greenwashing may mediate the impact of ESG performance on long-term M&A performance.

Greenwashing does not just directly impact long-term M&A performance, but it can also play the role of a mediator in the impact of ESG performance on long-term M&A outcomes. Positive ESG performance results in low greenwashing, and low greenwashing contributes to long-term M&A performance in the form of value creation (Gunawan et al., 2023; Yang & Ma, 2026). This means that greenwashing mediates the impact of ESG performance on long-term M&A performance. Choudhary, Jain, and Yadav (2025) agreed that ESG performance, which focuses on maximising sustainability outcomes, can reduce greenwashing, which in turn can support long-term value creation from M&A transactions. While previous studies have separately examined the connections between ESG performance, greenwashing, and corporate performance, limited research has investigated greenwashing as the mechanism linking ESG performance to long-term M&A performance. Consequently, the mediating process remains theoretically and empirically underexplored. Based on RBV, signalling theory, and stakeholder theory, together with the existing empirical evidence, this study proposes that greenwashing behaviour mediates the influence of ESG performance on long-term M&A performance. Therefore, the following hypothesis can be proposed.

H4: Greenwashing behaviour mediates the relationship between acquirers' ESG performance and long-term M&A performance.

2.5. Conceptual Framework

The conceptual framework depicts the proposed relationships between the ESG performance of acquirers, greenwashing activities, and the performance of M&As in the long run. In this conceptual framework, the independent variable will be ESG performance, while the dependent variable will be the performance of M&As in the long run, and greenwashing behaviour acts as the mediating variable.

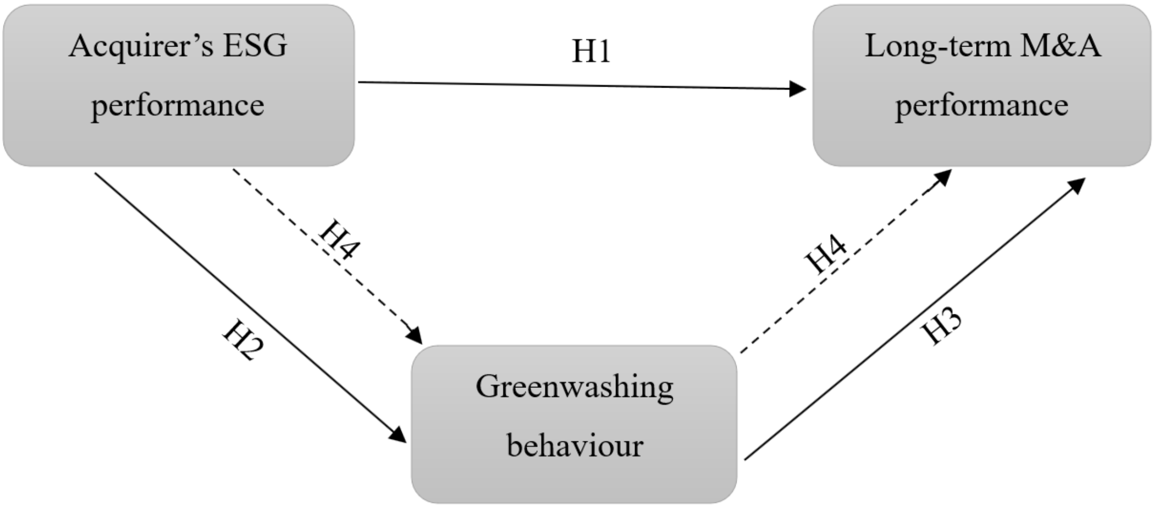

Figure 1. Conceptual Model.

Figure 1 illustrates that ESG performance will have a direct effect on long-term M&A performance (H1) and greenwashing behaviour (H2), whereas greenwashing behaviour will have a direct effect on long-term M&A performance (H3). The conceptual framework also claims that greenwashing behaviour will act as a mediator between the two variables (H4). These relationships have been formed through signalling theory, stakeholder theory, and the resource-based view.

2.6. Research Gap

Existing literature has focused on examining ESG performance and financial outcomes, along with the impact of greenwashing on M&A performance, but this has left significant gaps. First, most studies focus on general firm performance or short-term market reactions rather than long-term post-merger and acquisition performance. Second, despite growing concerns regarding greenwashing, relatively few studies have examined its role as a mediator connecting ESG performance to acquisition outcomes. Third, existing evidence is largely concentrated in developed markets, with limited attention given to the institutional and regulatory context of Chinese listed firms. Consequently, the mechanisms through which ESG performance influences long-term M&A performance remain insufficiently understood. By examining greenwashing as a mediator between acquirers' ESG performance and long-term M&A performance, this research addresses existing gaps and contributes to a comprehensive understanding of long-term value creation in M&A contexts.

To address these gaps, this study develops and empirically tests an integrated framework that examines the direct relationship between acquirers' ESG performance and long-term M&A performance. This is done while simultaneously investigating the mediating role of greenwashing behaviour in the Chinese capital market. By combining signalling theory, stakeholder theory, and RBV, the study provides an integrated explanation of the mechanism by which ESG performance impacts long-term acquisition outcomes.

3. METHODOLOGY

3.1. Research Design and Sample Selection

The research utilises a quantitative archival research design using panel data to analyse the relationship between acquirers' ESG performance and long-term M&A performance, along with the mediating role of corporate greenwashing behaviour. Quantitative panel data is suitable for examining longitudinal corporate phenomena because it can be used to observe changes over time (Ahmed & Islam, 2024). The focus of the study is on Chinese A-share acquiring firms listed on the SSE and SZSE, and the data span the period from 2009 to 2022. The sample period from 2009 to 2022 was selected because it captures a transformative phase in the development of ESG practices and corporate sustainability in China. During this period, Chinese regulators strengthened environmental governance, sustainability reporting expectations, and ESG-related disclosure requirements, leading to increased integration of ESG considerations into corporate decision-making. This period also witnessed growth in merger and acquisition activities among Chinese listed firms, providing an ideal situation for examining the interaction between ESG performance and long-term acquisition outcomes. The justification for selecting 2022 as the end of the study period is that long-term M&A performance is measured by accounting for performance over two years after acquisition. Limiting the final year of acquisition to 2022 can ensure that long-term M&A performance is available for two years so that long-term performance outcomes can be evaluated consistently.

3.2. Data Sources and Sample Screening

The population consists of firms listed on the SSE and SZSE that have completed M&A transactions. Several screening processes are applied to ensure comparability and improve the reliability of the analysis. Firstly, firms operating within the financial, insurance, banking, and real estate industries are excluded because these sectors operate under unique regulations. Secondly, firms designated as Special Treatment (ST or *ST) during the acquisition year are excluded to reduce distortions arising from financial distress. Thirdly, when an acquiring firm completed multiple acquisitions within the same fiscal year, only the largest transaction is considered to avoid overlapping integration effects. Finally, any observations with missing values for the variables to be studied are excluded. After screening, the final panel dataset included 1,689 firm-year observations representing 777 acquiring firms. The data on M&A transactions, financial statements, ownership characteristics, and governance indicators are from the China Stock Market and Accounting Research (CSMAR) database and the Wind database. The ESG and environmental disclosure information is obtained from Bloomberg and Huazheng ESG databases.

3.3. Variable Measurement

The independent variable is acquirers' ESG performance (ESG), which is measured by the Huazheng ESG rating score. The justification for selecting the Huazheng rating system is its extensive coverage of Chinese listed firms and data availability over a long period (Zhang, 2025). The Huazheng ESG database offers extensive information about firms listed on the SSE and SZSE, with a consistent evaluation methodology. These characteristics support longitudinal panel analyses of ESG performance and corporate acquisitions in the Chinese institutional context. However, Huazheng relies partly on publicly disclosed corporate information, making the ratings dependent on the credibility of firms' ESG disclosures. Differences in ESG methodologies across rating agencies may also result in variation in ESG scores. Despite these limitations, Huazheng ESG ratings are reliable because of their comprehensive coverage and methodological consistency.

The dependent variable of long-term M&A performance (Perfor) is assessed through the acquiring firm's average Return on Assets (ROA) over two fiscal years following completion of the acquisition. It is calculated as the mean ROA recorded during years t+1 and t+2 after the transaction year. This is because it shows realized operating performance and post-merger value creation instead of short-term market reactions.

The mediating variable of greenwashing behaviour (GW) is measured through the difference between environmental claims and environmental performance. It is measured as the difference between standardised Bloomberg Environmental Scores and standardised Huazheng Environmental Scores. The Bloomberg Environmental Score is used to assess symbolic commitments because it relies on publicly disclosed data rather than corporate actions or performance metrics (Tabur & Bildik, 2025). The Bloomberg ESG Disclosure Score was selected because it provides comprehensive and internationally recognised ESG data and applies a consistent scoring methodology, which makes it suitable for longitudinal panel analyses. The Bloomberg ESG Disclosure Score mainly reflects the quantity and comprehensiveness of ESG disclosures rather than the actual quality of firms' sustainability performance. On the other hand, the Huazheng Environmental Score can serve as a measure of actual environmental performance because it combines environmental indicators and local compliance. The difference between these two scores offers a measure of how much the claims of an organisation exceed its actual performance, and positive values indicate higher levels of greenwashing. This measure is based on the idea that greenwashing arises when firms' sustainability disclosures are greater than their actual ESG performance, creating a mismatch between communicated and actual sustainability practices. The measure is suitable because it simultaneously assesses firms' external ESG communication and their underlying ESG performance. However, this measure should be interpreted with caution, as differences between disclosure and performance may also exist because of differences in reporting strategies, industry contexts, or differences in the methodologies employed by ESG rating agencies.

To manage omitted-variable bias, six control variables are included. Firm size (SIZE) is assessed as the natural logarithm of total assets. Firm size is controlled because larger firms have more resources, which can impact ESG performance, greenwashing behaviour, and post-acquisition performance (Chen, Zhang, Elston, Chen, & Hsu, 2026). Financial leverage (LEV) is assessed as total liabilities divided by total assets. This is relevant because firms with higher debt levels face greater financial constraints and monitoring, and this may impact sustainability investments and M&A performance (Bouchmel, Ftiti, Louhich, & Omri, 2024). Firm age (AGE) is calculated as the natural logarithm of the number of years since incorporation. It is important to control for this because older firms can have greater organisational experience and more resources to influence ESG practices and M&A performance (Collevecchio, Temperini, Barba-Sanchez, & Meseguer-Martinez, 2025). State ownership (SOE) is represented by a variable equal to one for state-owned enterprises and zero if they are not state-owned. Its importance is that state-owned enterprises in China are more impacted by government policy and supervision, which makes them more cautious about M&A decisions than privately owned firms (Ji & Huang, 2025). M&A scale (SCALE) is measured as transaction value relative to the acquirer's total assets. It is important to control this because the size of an acquisition influences the complexity of post-merger integration, the resources required for successful implementation, and the potential value created by the transaction (George, 2025). This means that large M&As can have greater synergy along with higher risk, which may impact long-term M&A performance. Payment method (PAY) distinguishes cash transactions from stock-based transactions. It is relevant because the method of financing an acquisition communicates information to investors about the acquiring firm's valuation and financial condition (Cho & Chung, 2022). This is linked to signalling theory because different payment methods can impact market confidence and post-merger performance.

3.4. Analysis

All processes of data cleaning, construction of variables, standardisation procedures, and descriptive analyses were carried out using Python. The dataset underwent a comprehensive cleaning process to ensure its accuracy and consistency. The data obtained from the CSMAR, Huazheng ESG, and Bloomberg databases were merged using firm identifiers and fiscal years. Observations with incomplete information for the key variables required for the analysis were excluded during the sample screening stage. Duplicate observations were identified by checking the combination of firm identifiers and fiscal years, and no duplicate firm-year records were detected in the final merged dataset. The panel regression models, fixed-effects estimations, clustered robust standard errors, and bootstrap mediation analyses were subsequently carried out in RStudio 18. The combined use of Python and RStudio contributed to efficient data management, econometric estimation, and hypothesis testing.

Diagnostic tests were implemented before estimating the regression models. Multicollinearity among the explanatory variables was assessed using the Variance Inflation Factor (VIF), with values below the commonly accepted threshold, which indicated that multicollinearity was not a concern. Heteroskedasticity was investigated to understand whether the variance of the error terms remained constant across observations. Firm-clustered robust standard errors were utilised to obtain consistent statistical inference because panel data can exhibit heteroskedasticity and within-firm serial correlation. Autocorrelation was also analysed to check for potential serial dependence in the error terms across time. Model specification was evaluated to ensure that the regression models correctly represented the relationships among the study variables and included relevant control variables.

To test the proposed hypotheses and mediation mechanism, three regression models are estimated. Consistent with mediation research, the analytical framework sequentially evaluates the direct impact of ESG performance on long-term M&A performance, the influence of ESG performance on greenwashing behaviour, and the combined effects of ESG performance and greenwashing on long-term M&A performance. The models are estimated using two-way fixed-effects panel regression with firm-clustered robust standard errors to address potential heteroskedasticity and within-firm serial correlation. The fixed-effects estimator was selected because it controls for unobserved firm-specific characteristics that can affect ESG practices and long-term M&A performance. This is more appropriate than the random-effects model because it does not assume that unobserved firm-specific effects are uncorrelated with the explanatory variables. Firm-clustered robust standard errors are employed to account for heteroskedasticity and within-firm serial correlation, thereby improving the reliability of statistical inference. Generalised Method of Moments (GMM) estimation was not utilised because the objective of this study is to estimate contemporaneous relationships rather than dynamic adjustment processes. The validity of the fixed-effects estimator assumes that the explanatory variables are strictly exogenous with respect to the idiosyncratic error term, that no omitted time-varying confounding factors simultaneously affect the independent and dependent variables after controlling for firm and year fixed effects, and that the model is correctly specified.

To strengthen temporal ordering and reduce concerns regarding reverse causality, the independent and control variables are lagged by one year relative to the outcome variables. The mediating effect of greenwashing behaviour is assessed using a non-parametric bootstrap procedure with 5,000 firm-level resamples. Bootstrap approaches are widely recommended because indirect effects often exhibit non-normal sampling distributions (Alfons, Ateş, & Groenen, 2022). Bias-corrected bootstrap confidence intervals therefore provide a more robust assessment of mediation effects.

Data cleaning and preprocessing were implemented in Python using the pandas, NumPy, SciPy, and statsmodels libraries. The regression analyses were performed in RStudio using the fixest package, with the feols() function used to estimate two-way fixed-effects panel regression models with firm-clustered robust standard errors. Bootstrap mediation analyses were carried out using the boot package through the boot() and boot.ci() functions to estimate bootstrap confidence intervals. Additional data manipulation and descriptive analyses were done using the dplyr and psych packages, and regression outputs were generated and formatted using the modelsummary package.

3.5. Regression Equations

Model 1 estimates the direct impact of ESG performance on long-term M&A performance. Model 2 examines whether ESG performance influences greenwashing behaviour. Model 3 integrates ESG performance, greenwashing behaviour, and long-term M&A performance to examine the direct and indirect relationships and understand the mediating role of greenwashing behaviour.

Model 1: Effect of ESG Performance on Long-term M&A Performance.

Model 1 examines the relationship between acquirers' ESG performance and long-term M&A performance.

$$Perfor_{it} = \beta_0 + \beta_1\, ESG_{i,t-1} + \beta_2\, AGE_{i,t-1} + \beta_3\, SIZE_{i,t-1} + \beta_4\, SOE_{i,t-1} + \beta_5\, SCALE_{i,t-1} + \beta_6\, PAY_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

Where

- $Perfor_{it}$ = Long-term M&A performance of firm *i* in year *t*.
- $ESG_{i,t-1}$ = Lagged ESG performance.
- $AGE_{i,t-1}$ = Lagged firm age.
- $SIZE_{i,t-1}$ = Lagged firm size.
- $SOE_{i,t-1}$ = Lagged state ownership.
- $SCALE_{i,t-1}$ = Lagged M&A transaction scale.
- $PAY_{i,t-1}$ = Lagged payment method.
- β_0 = Intercept.
- β_1–β_6 = Regression coefficients.
- μ_i = Firm fixed effects.
- λ_t = Year fixed effects.
- ε_{it} = Error term.

Model 2: Effect of ESG Performance on Greenwashing Behaviour.

Model 2 examines the relationship between acquirers' ESG performance and greenwashing behaviour.

$$GW_{it} = \beta_0 + \beta_1\, ESG_{i,t-1} + \beta_2\, AGE_{i,t-1} + \beta_3\, SIZE_{i,t-1} + \beta_4\, SOE_{i,t-1} + \beta_5\, SCALE_{i,t-1} + \beta_6\, PAY_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{it} \quad (2)$$

Where

- GW_{it} = Greenwashing behaviour of firm *i* in year *t*.
- $ESG_{i,t-1}$ = Lagged ESG performance.
- $AGE_{i,t-1}$ = Lagged firm age.
- $SIZE_{i,t-1}$ = Lagged firm size.
- $SOE_{i,t-1}$ = Lagged state ownership.
- $SCALE_{i,t-1}$ = Lagged M&A transaction scale.
- $PAY_{i,t-1}$ = Lagged payment method.
- β_0 = Intercept.
- β_1–β_6 = Regression coefficients.
- μ_i = Firm fixed effects.
- λ_t = Year fixed effects.
- ε_{it} = Error term.

Model 3: Mediation Model

Model 3 examines whether greenwashing behaviour mediates the relationship between ESG performance and long-term M&A performance.

$$Perfor_{it} = \beta_0 + \beta_1\, ESG_{i,t-1} + \beta_2\, GW_{it} + \beta_3\, AGE_{i,t-1} + \beta_4\, SIZE_{i,t-1} + \beta_5\, SOE_{i,t-1} + \beta_6\, SCALE_{i,t-1} + \beta_7\, PAY_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{it} \quad (3)$$

Where

- $Perfor_{it}$ = Long-term M&A performance of firm *i* in year *t*.
- GW_{it} = Greenwashing behaviour.
- $ESG_{i,t-1}$ = Lagged ESG performance.
- $AGE_{i,t-1}$ = Lagged firm age.
- $SIZE_{i,t-1}$ = Lagged firm size.
- $SOE_{i,t-1}$ = Lagged state ownership.
- $SCALE_{i,t-1}$ = Lagged M&A transaction scale.
- $PAY_{i,t-1}$ = Lagged payment method.

- β_0 = Intercept.
- β_1–β_7 = Regression coefficients.
- μ_i = Firm fixed effects.
- λ_t = Year fixed effects.
- ε_{it} = Error term.

4. RESULTS

4.1. Overview

This chapter discusses the empirical results obtained from the study on the mediating effect of greenwashing behaviour between the ESG performance of acquirers and long-term M&A performance. The data analysis was based on Chinese A-share acquiring firms listed on the Shanghai and Shenzhen Stock Exchanges during 2009–2022. Finally, we used 1,689 firm-year observations from 777 different firms. Data cleaning, descriptive statistics, correlation analysis, and checks for multicollinearity were performed using Python, while fixed-effects regression and mediation analysis were performed using RStudio. The chapter first summarizes the descriptive statistics and correlation findings, then presents the findings from the regression analysis used for each hypothesis and the bootstrapped mediation test.

4.2. Data Cleaning and Preprocessing

The data were loaded and inspected for data structure, year coverage, duplication of firm-years, and missing values. The analysis validated 1,689 observations and 777 firms, and it did not detect any missing values or duplicate records. The variables were selected and used for the study; descriptive statistics and correlation analysis were developed; VIF was checked, and lagged variables were created for regression analysis.

Table 1. Descriptive Statistics.

Variables	N	Mean	SD	Minimum	Median	Maximum
Perfor	1,689	5.027	6.069	-35.139	4.344	47.512
ESG	1,689	74.919	5.033	44.670	75.200	88.950
GW	1,689	-0.068	1.164	-3.350	-0.115	5.028
AGE	1,689	2.938	0.321	1.099	2.944	4.007
SIZE	1,689	23.176	1.271	18.266	23.053	28.136
SOE	1,689	0.381	0.486	0.000	0.000	1.000
SCALE	1,689	9.363	2.141	-9.210	9.561	16.495
PAY	1,689	0.878	0.327	0.000	1.000	1.000

4.3. Descriptive Statistics

Table 1 reports the results from 1,689 firm-year observations of 777 Chinese firms (A shares) listed on the Shanghai and Shenzhen Stock Exchanges. The mean ESG score is 74.919 (SD = 5.033), which reflects that, on average, the acquiring firms have relatively good ESG performance in terms of the Huazheng ESG rating system. The standard deviation is moderate, indicating that the ESG performance of firms is relatively consistent across the sample but that there are still some differences between firms. The average greenwashing score is −0.068, ranging from the lowest score of −3.350 to the highest score of 5.028, suggesting that there is a significant cross-sectional spread in the difference between the environmental disclosures made by companies and their actual environmental impacts. The average long-term M&A performance (Perfor) is 5.027, with a large standard deviation and a wide range (−35.139 to 47.512), indicating that post-acquisition performance is highly heterogeneous. The descriptive statistics also show that the sample is appropriate for the analysis of the relationships between ESG performance, greenwashing behaviour, and long-term M&A performance, as the firms exhibit some variation in terms of firm age, firm size, ownership structure, transaction size, and payment mode.

4.4. Correlation Analysis

The correlation matrix (Table 2) indicates that ESG and greenwashing are weakly positively associated with long-term M&A performance, respectively. The negative raw correlation between ESG and greenwashing indicates that there is a significant negative relationship between these two variables. The majority of the correlations are not very high, so there is no serious concern about multicollinearity. The VIF results show that all variables have very low VIF values. The highest VIF is for SIZE at 1.304, while all other variables are close to 1. Since all VIF values are far below the common threshold of 5 or 10, there is no serious multicollinearity problem among the independent and control variables.

Table 2. Correlation output.

Variables	Perfor	ESG	GW	AGE	SIZE	SOE	SCALE	PAY
Perfor	1.000	0.032	0.053*	-0.158***	-0.217***	-0.116***	-0.079**	0.004
ESG	0.032	1.000	-0.271***	0.047	0.204***	0.176***	0.022	0.012
GW	0.053*	-0.271***	1.000	-0.022	0.010	-0.050*	0.060*	-0.000
AGE	-0.158***	0.047	-0.022	1.000	0.176***	0.039	0.037	0.131***
SIZE	-0.217***	0.204***	0.010	0.176***	1.000	0.318***	0.304***	0.030
SOE	-0.116***	0.176***	-0.050*	0.039	0.318***	1.000	0.069**	-0.065**
SCALE	-0.079**	0.022	0.060*	0.037	0.304***	0.069**	1.000	-0.169***
PAY	0.004	0.012	-0.000	0.131***	0.030	-0.065**	-0.169***	1.000

Note: *, **, and *** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Correlation coefficients without asterisks are not statistically significant.

Table 3. Regression output I.

Predictor	B	SE	t	p
Lagged ESG	-0.075	0.070	-1.064	0.288
Lagged AGE	3.079	3.126	0.985	0.326
Lagged SIZE	-1.865	0.852	-2.188	0.030
Lagged SOE	-3.156	0.753	-4.192	< 0.001
Lagged SCALE	-0.195	0.112	-1.733	0.084
Lagged PAY	1.564	0.717	2.183	0.030
Model H1				
$R^2 = 0.752$				
Adjusted $R^2 = 0.605$				
$F(18, 250) = 42.016$, $p < 0.001$				

4.5. Hypothesis Testing (Fixed-Effects Regression Analysis)

This table presents the results on the impact of lagged ESG performance on long-term M&A performance (Table 3). The model was statistically significant, $F(18, 250) = 42.016$, $p < 0.001$. The overall R^2 was 0.752, and adjusted R^2 was 0.605, suggesting that the overall model (with the inclusion of firm and year fixed effects) captured a significant percentage of the total variation in the long-term performance of M&A transactions. The coefficient on lagged ESG does not have a meaningful impact on the long-term performance of M&A, as it is negative and not statistically significant. Hence, H1 is not supported. The control variables significantly affect the model, with negative effects for firm size and state ownership and a positive effect for payment method. This indicates that there are some firm and transaction attributes predicting performance better than ESG in this model.

Table 4 shows the impact of lagged ESG performance on greenwashing behaviour. The results showed that model H2 had an R^2 of 0.669, an adjusted R^2 of 0.474, and an F-statistic of 28.076 ($p < 0.001$), indicating a statistically significant model for explaining greenwashing behaviour. The ESG coefficient is positive and statistically significant, suggesting that higher ESG performance is related to greater greenwashing behaviour. Contrary to the hypothesis, ESG was not found to have a negative impact on greenwashing. Thus, H2 is not supported.

Table 4. Regression output II.

Predictor	B	SE	t	p
Lagged ESG	0.029	0.012	2.513	0.013
Lagged AGE	0.069	0.739	0.093	0.926
Lagged SIZE	-0.252	0.139	-1.809	0.072
Lagged SOE	-0.261	0.306	-0.853	0.395
Lagged SCALE	0.006	0.022	0.251	0.802
Lagged PAY	0.163	0.132	1.233	0.219
Model H2				
$R^2 = 0.669$				
Adjusted $R^2 = 0.474$				
$F(18, 250) = 28.076, p < 0.001$				

However, the correlation analysis reveals a strong negative correlation between ESG performance and greenwashing behaviour ($r = -0.271$), while the fixed-effects regression analysis suggests a positive relationship after the inclusion of control variables, firm characteristics, and year effects. The Pearson correlation reflects the bivariate association between two variables, with no attempt to control for other variables, while the regression coefficient estimates the conditional relationship, taking into account the firm fixed effects that represent unobserved firm heterogeneity and are controlled for in the regression.

Table 5. Regression output III.

Predictor	B	SE	t	p
Lagged ESG	-0.081	0.070	-1.167	0.244
Greenwashing	0.233	0.195	1.193	0.234
Lagged AGE	3.063	3.125	0.980	0.328
Lagged SIZE	-1.807	0.837	-2.157	0.032
Lagged SOE	-3.095	0.770	-4.018	< 0.001
Lagged SCALE	-0.196	0.112	-1.755	0.080
Lagged PAY	1.526	0.727	2.100	0.037
Model H3				
$R^2 = 0.752$				
Adjusted $R^2 = 0.605$				
$F(19, 250) = 39.944, p < 0.001$				

The results presented in Table 5 examine whether there is a connection between greenwashing behaviour and long-term M&A performance, controlling for lagged ESG and firm characteristics. The overall fit for the model was also statistically significant, with an R^2 of 0.752, adjusted R^2 of 0.605, and an F-statistic of 39.944 ($p < 0.001$). The coefficient is positive and not statistically significant for greenwashing. However, in this model, greenwashing has no clear impact on long-term M&A performance. Therefore, H3 is not accepted.

Table 6. Mediation output.

Effect	Estimate	Boot SE	95% CI
Indirect effect: ESG → GW → Perfor	0.0068	0.0083	[-0.0068, 0.0264]
Direct effect: ESG → Perfor	-0.0814	—	—
Total effect: ESG → Perfor	-0.0746	—	—

4.6. Hypothesis Testing (Mediation Analysis)

The results of the bootstrapped mediation test for the indirect effect of ESG performance on long-term M&A performance via greenwashing behaviour are presented in Table 6. The indirect effect is positive but very small. Most importantly, the 95% bootstrap confidence interval extends to the null value, so the mediation effect is not statistically significant. Therefore, H4 is not supported. This indicates that the relationship between long-term M&A performance and greenwashing is not confirmed in these data. Both the direct and total effects are also not statistically significant.

Mediation analysis was further tested using 5,000 bootstrap resamples. The estimated indirect impact of ESG performance on long-term M&A performance due to greenwashing behaviour was 0.0068 with a bootstrap standard error of 0.0083. A bootstrapped 95% percentile confidence interval for the indirect effect was (−0.0068, 0.0264), including 0, implying that the indirect effect was not statistically significant. As such, the results from the bootstrap analysis do not lend support to a mediating role of greenwashing behaviour in the relationship between ESG performance and long-term M&A performance.

5. DISCUSSION

The study aimed to investigate whether acquirers' ESG performance influences long-term M&A performance and whether greenwashing behaviour affects this relationship among Chinese A-share-listed firms. Signalling theory, stakeholder theory, and the resource-based view (RBV) were relied on to propose four hypotheses connecting ESG performance, greenwashing behaviour, and post-acquisition performance. The findings demonstrate complex patterns, such as ESG performance being positively associated with greenwashing behaviour. However, no statistically significant relationships were observed between ESG performance and long-term M&A performance or between greenwashing behaviour and long-term M&A performance. The proposed mediating effect of greenwashing on the impact of ESG performance on post-M&A performance was also not found to be statistically significant.

The first hypothesis proposed that ESG performance positively impacts long-term M&A performance. However, ESG performance was not found to have a statistically significant effect on post-M&A performance. This means that H1 is not supported, and this contrasts with the findings of Fang and Guo (2025), Lin (2024), and Xu et al. (2024), who argued that ESG performance contributes to long-term value creation. The finding also goes against the study of Zou et al. (2025), which found that ESG performance has positive associations with long-term performance after M&As. There can be several explanations for this result, including the possibility that ESG performance can contribute to improved corporate reputation and stakeholder perceptions, but these benefits may not always result in measurable post-M&A performance within a span of two years. For example, M&A performance can also depend on the ESG performance of the acquired firm (Gigante et al., 2025). Compatibility of organisations and integration quality can also affect post-M&A performance, and such factors can have a greater impact on long-term post-M&A performance. Another implication of this finding can be that ESG ratings may not adequately reflect capabilities to achieve synergies after M&A. Therefore, strong ESG performance alone may be inadequate to ensure successful post-M&A integration.

From the perspective of signalling theory, the finding suggests that ESG performance may not be a strong and relevant signal in the context of M&A of Chinese listed firms. Signalling theory implies that observable performance would communicate trust through long-term potential. However, if ESG reporting is considered an imperfect or inconsistent indicator of long-term M&A performance, then its signalling value may be limited. This is aligned with the statements of Clément et al. (2025) about the lack of agreement about how ESG should be measured. It implies that ESG is important for reputation and disclosure, but there is a lack of certainty about its impact on long-term M&A performance.

The second hypothesis predicted that acquirers' ESG performance negatively impacts greenwashing behaviour. The findings showed that the opposite was true because there was a statistically significant positive relationship, which means that firms with higher ESG performance have greater greenwashing behaviour. This means that H2 is not supported, and it goes directly against the findings of Bu et al. (2024) and Gunawan et al. (2023), which found that stronger ESG performance signifies a lesser tendency to engage in greenwashing. However, this might support the statement of Bams and van der Kroft (2022) that the difference between ESG ratings and performance is because of the time it takes to implement sustainability initiatives. It implies that demonstrating commitment to sustainability initiatives can improve ESG ratings, resulting in improved reputation and access to green finance. However, the time taken for implementation can be long, and this can also be mistaken for greenwashing since the commitments have not been fulfilled yet, which leads to a gap between disclosures and actual performance.

The findings are relevant in the context of Chinese firms listed on SSE and SZSE because disclosure expectations and regulations have increased recently (Lee, 2024; RSM, 2024). Growing pressure for ESG disclosure can result in firms strengthening their communication, regardless of whether ESG performance has improved significantly. This means that the positive relationship between ESG performance and greenwashing is not necessarily deception of stakeholders. On the other hand, it can imply that high pressure for ESG disclosure can result in ESG communication developing faster than actual improvements in performance.

The third hypothesis proposed that greenwashing behaviour has an adverse impact on long-term M&A performance. The findings show that the coefficient is positive but statistically insignificant, which implies that it does not appear to impact long-term post-M&A performance. This goes against the findings of Yang and Ma (2026) that greenwashing has a negative impact on the long-term returns of M&As. A possible explanation for this finding is that the negative impacts of greenwashing may become evident over longer periods of time than considered in this study. It may not be possible for stakeholders to recognise discrepancies between disclosure and performance, which can result in reputation and access to finance being adversely affected. The findings also raise doubts about the applicability of RBV, which considers ESG capabilities as a resource that can contribute to sustainable competitive advantage. The result suggests that the absence of ESG capabilities did not hinder M&A performance within the period of the study because greenwashing can create a proxy for the capability for a short period. Therefore, the findings do not reject RBV, but imply that the relationship between sustainability capabilities and M&A performance may be more indirect and also observable over a longer period.

The fourth hypothesis proposed that greenwashing behaviour mediates the impact of ESG performance on long-term M&A performance. The findings revealed no statistically significant indirect effect, resulting in H4 being rejected. This finding is consistent with the other findings, where significant relationships could not be established with the dependent variable of long-term M&A performance. It means that ESG performance influences greenwashing behaviour, but neither of these variables demonstrates any impact on long-term post-acquisition performance. Signalling theory, stakeholder theory, and RBV explain different aspects of corporate sustainability, but they do not explain long-term M&A performance in the way it was originally proposed. Stakeholder theory is partially supported because the pressure of disclosure can make organisations respond to stakeholder expectations through commitments, which may materialise over time. Signalling theory could not be supported because ESG performance did not translate to post-acquisition success. RBV also could not explain why greenwashing did not result in expected negative performance.

Despite the rejection of the hypotheses, the study makes some important contributions, such as challenging the assumption that ESG performance directly translates into better M&A outcomes. The findings also highlight the possibility that the communication of firms highly rated on ESG performance can be more effective and efficient than their implementation, which can resemble greenwashing. Finally, the findings also imply that the gap between disclosure and performance in ESG does not necessarily affect post-M&A performance among Chinese-listed firms. In a practical context, the findings have relevant implications for regulators and stakeholders in the SSE and SZSE. The gap between disclosure and performance implies that regulators must improve verification of ESG reporting and commitments. Investors also need to be cautious when perceiving ESG performance as an indication of long-term value creation through M&As. Leaders and managers of listed companies also need to understand that ESG ratings cannot guarantee post-merger performance unless there is effective integration and alignment of capabilities. Therefore, the findings imply that ESG performance, greenwashing behaviour, and long-term M&A performance are related to each other in more complex ways than the theoretical model proposed in this study. ESG performance does not directly result in acquisition success but operates as a method of disclosure and reputation, whereas long-term performance may rely on broader organisational and strategic aspects.

6. CONCLUSION

6.1. Summary of Findings

This study examined the impact of the ESG performance of acquirers on long-term M&A performance among Chinese firms listed on SSE and SZSE. The mediating role of greenwashing in this relationship was also investigated. The study relied on signalling theory, stakeholder theory, and RBV to explain how sustainability-related capabilities and disclosure affect post-acquisition performance within the Chinese regulatory environment. The findings demonstrate a more complex relationship than was originally hypothesised. Firstly, ESG performance was not found to significantly impact long-term M&A performance, which means that an ESG rating cannot alone guarantee better post-acquisition performance. Contrary to expectations, ESG performance was found to be positively associated with greenwashing behaviour. This indicates that organisations with stronger ESG profiles may also implement sustainability communication that exceeds their performance. The study also found that greenwashing behaviour did not significantly impact long-term M&A performance. Finally, no evidence was found to support the mediating role of greenwashing in the relationship between ESG performance and post-acquisition performance. Overall, the findings hint at ESG performance, greenwashing behaviour, and long-term M&A success being connected in more complex ways than assumed. ESG engagement can improve corporate reputation and disclosure quality, but its direct impact on post-merger profitability is limited within the context investigated in the study.

6.2. Theoretical and Practical Implications

The study adds to existing literature by challenging the assumption that ESG performance directly translates into superior acquisition performance. Prior research has confirmed positive relationships between ESG ratings and firm performance, but the results of this study indicate that such relationships may not be applicable to post-acquisition performance. The study also makes an important contribution to greenwashing literature by revealing a positive relationship between ESG performance and greenwashing behaviour. This implies that highly rated ESG firms may have stronger incentives to highlight higher sustainability communication, which contributes to a greater gap between disclosure and performance. It highlights the importance of understanding the difference between sustainability disclosure and significant sustainability performance.

Theoretically, stakeholder theory was partially supported because ESG performance has some impact on disclosure-related behaviour. The mediating role of greenwashing shows that stakeholders respond not only to ESG disclosures but also to their perceived authenticity. Therefore, the study extends stakeholder theory by demonstrating that the quality and credibility of sustainability communication influence stakeholder responses, rather than ESG engagement alone. On the other hand, signalling theory receives limited support, as ESG ratings were not found to be reliable predictors of acquisition performance. The limited support for signalling theory suggests that ESG disclosures alone may not constitute credible signals of M&A performance. Therefore, the study challenges signalling theory by demonstrating that signal credibility or authenticity, rather than signal quantity, determines outcomes. RBV is also partially supported because greenwashing behaviour does not significantly impact post-acquisition performance. The findings extend RBV by demonstrating that ESG capabilities function as valuable strategic resources that enhance firm performance and also as important drivers of long-term value creation following M&As. The findings suggest that the relationships among ESG performance, stakeholder responses, and long-term M&A outcomes are more complex and dependent on context than existing theories can support.

Practically, the findings demonstrate the need for regulators in the SSE and SZSE to strengthen verification mechanisms to ensure consistency between ESG disclosures and actual environmental performance. This means that regulators must encourage and reward consistency between reported sustainability information and firms' actual ESG performance. Investors also need to exercise caution when considering ESG ratings as indicators of long-term acquisition success. Investment decisions need to be based on independent ESG assessments and comparison of disclosures with actual ESG performance. Leaders and managers need to reduce reliance on ESG ratings alone to contribute to long-term M&A performance. This is because effective post-merger integration and strategic execution are also important. Investment in substantive environmental and governance improvements is needed to improve internal ESG monitoring systems and ensure consistency between sustainability initiatives and disclosures.

6.3. Limitations and Future Research

The study has a limitation in focusing exclusively on Chinese listed firms and evaluating M&A performance using a two-year post-acquisition timeframe. This implies that the findings should be interpreted within the context of China's institutional, regulatory, and corporate governance environment, which may be different from those of other countries. Future research could examine the variables in different national contexts to understand whether the observed relationships remain the same across regulatory environments. Another limitation is that greenwashing is measured through the gap between disclosure and performance, which can limit the measurement of the variable. This means that the mediation effects should be understood as one perspective of greenwashing rather than a comprehensive assessment. Future research can develop other measures to evaluate greenwashing by investigating sustainability reports, ESG controversies, or disclosure analysis to validate the present findings. This can provide greater insight into how the effects of ESG performance and greenwashing develop over the long term in different regulatory contexts.

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REFERENCES

Ahmed, I., & Islam, M. T. (2024). Quantitative impact assessment of digital payment solutions on small business revenue panel data analysis from 1,200 U.S. SMES. *American Journal of Scholarly Research and Innovation*, *3*(2), 217-253. https://doi.org/10.63125/zy98jx29

Alfons, A., Ateş, N. Y., & Groenen, P. J. F. (2022). A robust bootstrap test for mediation analysis. *Organizational Research Methods*, *25*(3), 591-617. https://doi.org/10.1177/1094428121999096

Bams, D., & van der Kroft, B. (2022). *Tilting the wrong firms? Sustainable investing in transitioning firms.* MIT Center for Real Estate Research Paper No. 22/12. Cambridge, MA: MIT Center for Real Estate.

Bouchmel, I., Ftiti, Z., Louhich, W., & Omri, A. (2024). Financing sources, green investment, and environmental performance: Cross-country evidence. *Journal of Environmental Management*, *353*, 120230. https://doi.org/10.1016/j.jenvman.2024.120230

Bu, M., Liu, X., Zhang, B., Hazaea, S. A., Fan, R., & Wang, Z. (2024). Governance of corporate greenwashing through ESG assurance. *Systems*, *12*(9), 365. https://doi.org/10.3390/systems12090365

Chambers. (2024). *China: An introduction to corporate/M&A (PRC Firms).* Retrieved from https://chambers.com/content/item/6165

Chen, K.-H., Zhang, Y., Elston, J. A., Chen, P.-H., & Hsu, K.-H. (2026). Environmental, social, and governance (ESG) initiative scores and firm performance: The importance and role of firm size. *Small Business Economics*, *66*(1), 71-95. https://doi.org/10.1007/s11187-025-01096-1

Chen, X., Ma, C., Wu, W., & Hao, F. (2026). Green M&A, green finance, and corporate market value enhancement: A signaling game-theoretic and empirical analysis. *Systems*, *14*(6), 641. https://doi.org/10.3390/systems14060641

Cho, S., & Chung, C. Y. (2022). Review of the literature on merger waves. *Journal of Risk and Financial Management*, *15*(10), 432. https://doi.org/10.3390/jrfm15100432

Choudhary, P., Jain, N. K., & Yadav, P. (2025). Advancing green business expansion through strategic mergers and acquisitions leveraging sustainability and government policy for enhanced innovation and resilience. *Discover Environment*, *3*(1), 287. https://doi.org/10.1007/s44274-025-00480-8

Clément, A., Robinot, É., & Trespeuch, L. (2025). The use of ESG scores in academic literature: A systematic literature review. *Journal of Enterprising Communities: People and Places in the Global Economy*, *19*(1), 92-110. https://doi.org/10.1108/JEC-10-2022-0147

Collevecchio, F., Temperini, V., Barba-Sanchez, V., & Meseguer-Martinez, A. (2025). Sustainable governance: Board sustainability experience and the interplay with board age for firm sustainability. *Journal of Business Ethics*, *197*(2), 371-389. https://doi.org/10.1007/s10551-024-05739-3

Fang, L., & Guo, X. (2025). From responsibility to value: ESG and long-term corporate value. *PLoS ONE*, *20*(4), e0322018. https://doi.org/10.1371/journal.pone.0322018

Frendy, Oshika, T., & Koike, M. (2024). Environmental greenwashing in Japan: The roles of corporate governance and assurance. *Meditari Accountancy Research*, *32*(7), 266-295. https://doi.org/10.1108/MEDAR-11-2023-2216

Galavotti, I., & Depperu, D. (2026). ESG divergence and ownership imbalance: Rethinking sustainability value creation in mergers and acquisitions. *Corporate Social Responsibility and Environmental Management*, *33*(2), 2052-2063. https://doi.org/10.1002/csr.70270

Gangi, F., Varrone, N., Ossorio, M., Daniele, L. M., & Coscia, M. (2026). Target firm's ESG engagement and post–M&A performance: The mediating role of acquirer's CSR strategy. *Business Strategy and the Environment*, 1–20. https://doi.org/10.1002/bse.70818

García-Nieto, M., Bueno-Rodríguez, V., Ramón-Jerónimo, J. M., & Flórez-López, R. (2024). Trends and risks in mergers and acquisitions: A review. *Risks*, *12*(9), 143. https://doi.org/10.3390/risks12090143

George, A. S. (2025). Mega-mergers and human dynamics: A review of integration failures and success factors. *Partners Universal International Innovation Journal*, *3*(6), 1-27. https://doi.org/10.5281/zenodo.18195213

Gherghina, Ş. C. (2024). Corporate finance and environmental, social, and governance (ESG) practices. *Journal of Risk and Financial Management*, *17*(7), 308. https://doi.org/10.3390/jrfm17070308

Gigante, G., Galli, L., & Scarlini, F. (2025). Corporate sustainability and M&A acquisition premiums. *Business Strategy and the Environment*, *34*(5), 5563-5575. https://doi.org/10.1002/bse.4259

Gunawan, J., Gunawan, I., & Liu, Y. C. (2023). Environmental, social, and governance (ESG) performance evaluation to reduce potential greenwashing based on Sustainable Fitch Index. *International Journal of Entrepreneurship and Sustainability Studies*, *3*(2), 29-39.

Gupta, N., Kashiramka, S., & Singh, S. (2025). Navigating borders and sustainability: Unravelling the impact of sustainability on cross-border M&A performance in emerging markets. *Corporate Social Responsibility and Environmental Management*, *32*(5), 6235-6260. https://doi.org/10.1002/csr.70022

Janik, A., & Ryszko, A. (2026). Greenwashing in sustainability reporting: A systematic literature review of strategic typologies and content-analysis-based measurement approaches. *Sustainability*, *18*(1), 17. https://doi.org/10.3390/su18010017

Ji, X., & Huang, X. (2025). ESG performance and corporate M&A behavior—based on the dual perspectives of the quantity and quality of M&As. *Sage Open*, *15*(4), 21582440251386960. https://doi.org/10.1177/21582440251386960

Koch, T., & Denner, N. (2025). What is greenwashing – a scoping review of greenwashing definitions and development of the Need-for-Balance Model. *Journal of Sustainable Business*, *10*(1), 17. https://doi.org/10.1186/s40991-025-00124-3

Kulova, I., & Nikolova-Alexieva, V. (2023). ESG strategy: Pivotal in cultivating stakeholder trust and ensuring customer loyalty. *E3S Web of Conferences*, *462*, 03035. https://doi.org/10.1051/e3sconf/202346203035

Lee, K. (2024). *China's stock exchanges unveil disclosure rules for big companies*. Green Central Banking. Retrieved from https://greencentralbanking.com/2024/02/23/china-stock-exchange-disclosure-rules/

Lee, M. T., & Raschke, R. L. (2023). Stakeholder legitimacy in firm greening and financial performance: What about greenwashing temptations? *Journal of Business Research*, *155*, 113393. https://doi.org/10.1016/j.jbusres.2022.113393

Lin, Y. (2024). The role of ESG strategy implementation in long-term value creation for companies. *Journal of Social Science and Cultural Development*, *1*(2), 1-16. https://doi.org/10.70767/jsscd.v1i2.288

Ma, R., Pan, X., & Suardi, S. (2024). Shareholder value maximization via corporate ESG performance: Evidence from mergers and acquisitions in China. *Applied Economics*, *56*(58), 8529-8545. https://doi.org/10.1080/00036846.2023.2291095

Merter, A. K., & Balcıoğlu, Y. S. (2026). Predicting environmental outcomes of energy sector mergers and acquisitions using TabTransformer architecture: A deep learning approach to green consolidation. *Thunderbird International Business Review*, 1–20. https://doi.org/10.1002/tie.70131

Minev, S., Dankova, P., & Štrukelj, T. (2025). Long-term effect of environmental, social, and governance (ESG) corporate practices on corporate stock performance. *Sustainability*, *17*(24), 11321. https://doi.org/10.3390/su172411321

Nguyen, D. T., Michayluk, D., Van de Venter, G., & Walker, S. (2026). From greenwashing to green transformation: Evidence from mergers and acquisitions. *International Journal of Managerial Finance*, *22*(4), 848–868. https://doi.org/10.1108/IJMF-02-2026-0093

Noor, M. F., Hayat, A., Juniar, A., Zulelli, R., & Hadi, A. (2025). Critical success factors in mergers and acquisitions: Insights from a systematic review across regions and sectors. *Asian Journal of Management, Entrepreneurship and Social Science*, *5*(2), 699-720.

Pai, A. U. (2025). Integration of environmental, social and governance (ESG) factors in mergers and acquisitions. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.6224958

Poiriazi, E., Zournatzidou, G., Konteos, G., & Sariannidis, N. (2025). Analyzing the interconnection between environmental, social, and governance (ESG) criteria and corporate corruption: Revealing the significant impact of greenwashing. *Administrative Sciences*, *15*(3), 100. https://doi.org/10.3390/admsci15030100

RSM. (2024). *The future of business—Evolving through ESG and climate reporting: China: Special report on the Asia-Pacific*. Retrieved from https://www.rsm.global/australia/esg-and-climate-reporting-apac/china

Spaniol, M. J., Danilova-Jensen, E., Nielsen, M., Rosdahl, C. G., & Schmidt, C. J. (2024). Defining greenwashing: A concept analysis. *Sustainability*, *16*(20), 9055. https://doi.org/10.3390/su16209055

Tabur, M., & Bildik, R. (2025). The impact of ESG rating disagreement on the financial performance of environmentally sensitive industry companies worldwide. *Borsa Istanbul Review*, *25*(3), 435-448. https://doi.org/10.1016/j.bir.2025.01.013

Xu, S., Li, H., Chen, J., Huo, J., & Kuang, X. (2024). Sustainable competitiveness through ESG performance: An empirical study on corporate resilience. *Journal of Competitiveness*, *16*(3), 53–72. https://doi.org/10.7441/joc.2024.03.03

Yang, Z., & Ma, P. (2026). Environmental commitments in M&A announcements and market performance: Evidence from China. *Sustainability*, *18*(6), 3138. https://doi.org/10.3390/su18063138

Zhang, Y. (2025). Comparison of the current status of ESG rating systems. *SHS Web of Conferences*, *225*, 03001. https://doi.org/10.1051/shsconf/202522503001

Zou, X., Wang, Z., & Zhao, J. (2025). The impact of ESG performance of acquirer on the long-term performance of cross-border mergers and acquisitions of China a-share listed companies: An analysis based on two-way fixed effect and threshold effect. *Sustainability*, *17*(14), 6566. https://doi.org/10.3390/su17146566