Proceedings of ICEMGD 2026 Symposium: Rethinking Governance and Policy Innovation for Societal Challenges
DOI: 10.54254/2754-1169/2026.LH35671

Corporate ESG Greenwashing Behavior and Audit Risks: A Case Study of Anta Sports

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Abstract. As ESG principles gain increasing influence over capital markets, corporate greenwashing has attracted heightened regulatory an investor scrutiny. The study examines the 2025 Arc'teryx fireworks marketing incident conducted under Anta Group's ownership to illustrate how greenwashing practices can manifest as tangible audit risk. It identifies a clear contradiction between Anta's biodiversity pledge and its subsidiary' marketing actions as a typical greenwashing case. Following the incident, the company's market value shrank sharply and its ESG ratings diverged. From an audit perspective, material weaknesses in core internal controls heighten the assessed control risk. Further analysis reveals ESG governance penetration failure in multi-brand groups as the key transmission mechanism. This paper also highlights that high ESG ratings can lead auditors to underestimate risk. The study introduces the concept of "ESG governance penetration failure" and provides preliminary evidence of audit risk perception bias under a "rating halo." These findings contribute to research on ESG audit governance.

Keywords: ESG greenwashing, Audit risk, Internal control weaknesses, Signaling mechanism, Anta Sports

1. Introduction

The global sustainable investment landscape has expanded dramatically in recent years. Data from the Global Sustainable Investment Alliance (GSIA) shows that, by the end of 2021, global sustainable investment assets under management reached USD 30.3 trillion, accounting for nearly a quarter of the total asset management in major global markets [1]. This growth reflects a significant increase in the market's reliance on corporate ESG information. Yet this trend has been accompanied by a surge in ESG greenwashing, posing significant risks to the integrity and stability of global capital markets. A recent controversy brought these tensions into sharp relief. In September 2025, Arc'teryx—a premium brand under Anta Sports—staged a fireworks display in the Himalayan region of Xizang. The First Finance Research Institute flagged the event as a suspected case of greenwashing [2]. The gap between Anta's public ESG commitments and its operational decisions was striking, offering a revealing window into how greenwashing can generate audit risk.

Using this controversy as an exploratory single-case study, the study investigates greenwashing's characteristic features, market and rating-agency responses, the role of internal control weaknesses in audit risk assessment, and the judgment bias induced by high ESG ratings. To address the above

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questions, this study adopts signaling theory and the Committee of Sponsoring Organizations of the Treadway Commission (COSO) internal control framework to examine the transmission mechanism from greenwashing to audit risk. The study contributes on two fronts. Theoretically, it introduces and develops the concept of "ESG governance penetration failure," adding a new dimension to research on the economic consequences of greenwashing. Practically, it offers auditors an analytical lens for looking beyond rating scores to identify substantive ESG risks in multi-brand groups.

2. Relate work

Existing research on greenwashing addresses concept definition, manifestations, economic consequences, and governance mechanisms, organized as follows:

The term greenwashing, coined by American environmentalist Jay Westerveld in 1986, originally satirized corporations that feign environmental advocacy to cut costs [3]. Since then, scholars have defined it as a disconnect between superficial green initiatives and actual business practices—or, more broadly, as an inconsistency between environmental commitments and real actions [4, 5]. As the ESG framework has matured, greenwashing has expanded beyond environmental claims to encompass governance and social responsibility. Yang et al., drawing on the qualitative characteristics of accounting information, constructed a six-dimensional classification framework. Their typology—which includes categories such as lack of truthful representation and insufficient verifiability—serves as a practical tool for case analysis [6].

In terms of economic consequences, greenwashing incidents cause significant stock price drops; the higher a firm's prior ESG reputation, the more severe the market punishment [7]. From the perspective of consumer trust, greenwashing erodes brand trust and harms product market performance [8]. In cross-disciplinary research on greenwashing and audit risk, the greater a firm's degree of greenwashing, the higher its risk of material misstatement and audit risk. However, auditors generally underestimate the risk, and only those with industry expertise issue stricter audit opinions [9]. A subsequent study confirmed this relationship and identified contextual factors—such as firm size and industry characteristics—as moderators [10]. From a theoretical perspective, signaling theory and institutional theory constitute the mainstream framework for explaining phenomena in this field. Other studies specifically demonstrate the signal-transmission role of third-party verification in distinguishing superficial green claims from genuinely sustainable practices [11].

Some studies have begun questioning the signaling credibility of high ESG ratings. Empirical evidence shows that superficial corporate ESG communication is positively correlated with ratings, whereas actual environmental impact is negatively correlated with ratings. Conversely, high ratings may serve as a shield for greenwashing [12]. In addition, divergences across ESG rating stem not only from differences in rating agencies' methodologies but also from inconsistent corporate information disclosures [13]. Collectively, these studies demonstrate that high ratings and low risk cannot be equated.

A review of the literature reveals three key gaps. First, research relies heavily on macro theories and quantitative evidence but lacks in-depth case studies on how greenwashing drives audit risk—especially.ESG governance penetration failure in multi-brand groups. Second, few studies systematically examine how greenwashing exposes internal control weaknesses and distorts auditors' risk assessments. Third, existing work overlooks how high ESG ratings foster cognitive bias, specifically, the mistaken assumption that high ratings imply low risk, and the mechanism behindthis distortion. To address these gaps, this study analyzes the 2025 Arc'teryx "Shenglong" fireworks event in Xizang, a subsidiary of Anta Sports. The case offers three advantages: (1) Strong

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contrast: Anta holds top-tier ESG ratings (e.g., MSCI AA, CDP A), yet its subsidiary staged a high-profile event in an ecologically sensitive area—highlighting how rating can mask real risks. (2) Direct relevance: the incident exemplifies ESG governance penetration failure and traces the full pathway from greenwashing to audit risk, filling a critical micro-level mechanism gap. (3) Rich, timely data: Public sources including regulatory notices, stock reactions,and rating agency responses, enable bpoth empirical validation and practical references for auditors assessing ESG risks in multi-brand firms.

3. Theoretical framework

This study relies on two fundamental theories: signaling theory and the COSO internal control framework. Under conditions of information asymmetry, corporate actively signal their sustainability performance through ESG disclosures. Such positive signals help corporate lower capital costs under signling theory. However, greenwashing creates a mismatch between disclosed information and actual operations, triggering rapid reputational damage and severe market penalties. The COSO framework identifies five interrelated components of internal control: control environment, risk assessment, control activities, information and communication, and monitoring. Its 2023 guidance, *Internal Control Guidelines for Sustainability Reporting*, stresses that ESG risk assessment must move beyond routine compliance checks to evaluate how ESG-related risks materially affect strategic objectives.

Drawing on these theories, the study traces a clear analytical path that progresses from corporate behavior to market reaction, then to internal control weaknesses and finally to audit risk.

4. Case background

4.1. Anta Sports' ESG governance system and related commitments

Founded in 1991 and listed on the Hong Kong Exchange in 2007 (02020.HK), Anta Sports reported revenue of RMB 70.8 billion in 2024 (+13.6% YoY) and RMB 80.2 billion in 2025 (+13.3%), maintaining its leadership in China's sportswear market [14, 15]. Following its 2019 acquisition of Amer Sports, including Arc'teryx, the combined group surpassed RMB 100 billion in revenue by 2024, making Anta the third global sportswear company—after Nike and Adidas—to reach that milestone [14, 16].

Anta has established a three-tier ESG governance structure (group, brand, and functional levels), with its board's Sustainable Development Committee providing oversight. Its ESG ratings have risen sharply: MSCI upgraded Anta from BBB to AA between 2023 and 2025—the highest ESG rating among Chinese sportswear firms—and its earned its first CDP Climate Change A rating while joining the Hang Seng ESG 50 and Dow Jones Leading Emerging Markets Index [14, 15]. As Co-CEO Lai Shixian stated, Anta embeds quantified ESG targets into daily operations across all department [17].

In its 2024 ESG report, Anta pledged concrete actions for biodiversity: focusing operations in mature regions to avoid net loss, partnering with World Wide Fund for Nature (WWF) on endangered species protection, and raising the share of sustainable products to over 30% [18].

Yet this strong public ESG profile contrasts sharply with the September 2025 "Ascending Dragon" fireworks event staged by Arc'teryx in Xizang, a high-profile that triggered ecological criticism and raised serious questions about the real-world effectiveness of Anta's ESG governance.

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4.2. Review of the "Shenglong" fireworks show event

In September 2025, Arc'teryx—Anta Sports' flagship outdoor brand—staged the "Shenglong" firework show in Xizang's Himalayan region with artist Cai Guoqiang. Marketing touted its eco-friendliness, citing biodegradable materials and Beijing Winter Olympics environmental protocols [19]. Ecological experts strongly objected: Professor Hua Dan Caireng (Qinghai Minzu University) explained that on the high-altitude plateau, low temperatures and slow metabolism drastically slow degradation—materials that break down quickly elsewhere persist for years [19].

The incident severely damaged Anta's ESG reputation. As Wan notes, risk assessment had devolved into a rubber-stamp exercise: once the event was decided, it no longer questioned whether to proceed—only how to execute it [19].

4.3. Industry ESG governance background

Leading Chinese sportswear brands have strengthened ESG governance: Li-Ning achieved an MSCI BBB rating in 2025 and Xtep has expanded its sustainable product lines.

However, managing multi-brand portfolio creates inherent governance challenges across the industry. Even Li-Ning, which has avoided major ecological disputes among its subsidiaries, struggles with supply chain transparency and cross-brand compliance.

Anta, with over RMB 100 billion in asset, operates one of the industry's most comprehensive ESG systems. Yet this controversy reveals a sharp disconnect between its formal policies and on-the-ground execution at the brand level. Such failure of ESG governance penetration represents a distinct risk for multi-brand conglomerates.

5. Case analysis

5.1. Greenwashing feature recognition

The fireworks show was not an isolated misstep; it exposed the persistent tension between Anta's ESG commitments and its operational decisions. Applying the six-dimensional greenwashing classification framework proposed by Yang et al., this case displays clear greenwashing features in at least two dimensions [6]:

The first dimension, truthful representation, is clearly violated. Anta's 2024 ESG report details biodiversity commitments but omits any mention of the risks posed by subsidiaries conducting high-profile marketing in ecologically sensitive areas. According to the First Finance Research Institute, the site selection alone breached Anta's public ecological pledge—an unambiguous instance of greenwashing [2]. The second dimension—verifiability—is also compromised. The brand defended the fireworks as biodegradable and environmentally friendly, but never provided scientific evidence on their actual degradation rate under high-altitude, low-temperature, and low-bioactivity conditions. Without such verification, the environmental claim devolved into unverifiable public relations rhetoric.

5.2. Market response

5.2.1. Stock price fluctuations and brand damage

On September 22, 2025, as the controversy erupted, Anta Sports opened 4.60% lower, hit an intraday low of -7.28%, and closed down 2.22%. Amer Sports, the group's US-listed subsidiary, also

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tumbled, amplifying market unease. At one point, Anta's market value shed more than HK$10 billion intraday—a dramatic short-term slump. Xu et al. document a clear pattern: greenwashing news significantly harms stock performance, and firms with stronger prior ESG reputations suffer even fiercer market penalties [7].

The damage extended beyond capital markets. During the 2025 Tmall Double Eleven festival, Arc'teryx fell from first place among outdoor brands to outside the top 20. The greenwashing scandal clearly inflicted tangible damage on brand image and consumer confidence.

5.2.2. Rating differentiation and signal penalty

This case also exposes notable methodological divergences across ESG rating providers. In 2025, MSCI upgraded Anta from A to AA and maintained that rating even after the controversy became public [15]. Wind told a different story: over the same period, Anta's standalone Wind ESG score fell to 2.92, below the Hong Kong stock average of 2.98, and its comprehensive score edged down to 2.95.

These disparities reflect fundamental design differences between the two systems. MSCI's framework combines issue management scores with rules for deducting points forr adverse incidents. Controversial events carry relatively low weight, and remedial efforts are explicitly credited. Once verified, such remedies can offset incurred penalties [20].

After the public backlash, Arc'teryx issued a formal apology and pledged to commission third-party environmental assessments and advance environmental initiatives in Xizang—commitments that align precisely with MSCI's remedial action criteria [19]. MSCI also evaluates firms relative to industry peers. Anta's sustained investment in ESG infrastructure and disclosure quality has helped it maintain a strong domestic standing. However, Wind applies a fundamentally different methodology: real-time weighted deductions for negative events across three dimensions—media coverage, regulatory sanctions, and legal cases. Consequently, Anta's Wind ESG score dropped sharply once the incident surfaced.

No direct evidence confirms why MSCI kept Anta's rating unchanged; possible explanations include remedial actions, rating-cycle lags, or the incident being classified as non-material. Yet the divergence itself points to a deeper structural problem. Mainstream ESG rating systems are built to verify whether companies follow disclosure procedures—not whether their ESG commitments are actually carried out. Kathan et al. observe that companies can earn high ratings through skillful communication while their real environmental footprint goes unexamined. The result is predictable—high ratings often reflect branding success, not genuine performance [12].

On the other hand, Xu et al. found firms with stronger ESG reputations before a scandal face even harsher market penalties once greenwashing is exposed [7]. For years, Anta used ESG reporting to signal sustainability leadership. A sub-brand's high-impact marketing push into an ecologically fragile region contradicted that image directly. The contradiction broke the signal's credibility and eroded market confidence. The multibillion-dollar value loss was the market's verdict on greenwashing.

While MSCI upheld Anta's high rating, Wind's score, the share price, and the brand's ranking all slumped simultaneously. Investors, it seems, no longer blindly trust rating premiums; they have begun independently assessing firms' underlying ESG risks.

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5.3. Audit risk analysis

Beyond the immediate market reaction, the fireworks incident exposed material weaknesses in Anta's internal control. Huang documents a clear link: firms with more severe greenwashing face higher risks of material misstatement and greater audit risk [9]. This case reveals two specific mechanisms through which greenwashing feeds into audit risk.

5.3.1. Internal control deficiencies

China's Basic Norms for Enterprise Internal Control identifies five components of internal control, including the control environment, risk assessment, and control activities, among others. The Anta incident exposed deficiencies across all five, three of which are analyzed below [21].

At the internal environment level, deeper problems emerged. Anta's ESG disclosures publicly committed to biodiversity protection, yet its subsidiary acted in direct contradiction. Such a gap signals weak management follow-through on ESG pledges. At the same time, an internal corruption case came to light: 74 employees dismissed, 46 referred to judicial authorities, roughly RMB 30 million was involved [22]. Both incidents point to weakened integrity and ethical values in the company's internal environment.

At the risk assessment level, the fireworks project assessment followed a purely checklist-based compliance approach, verifying only basic indicators such as material degradability and operational specifications while completely overlooking the ecological sensitivity of the Qinghai-Xizang Plateau [19]. The root cause of that is a structural distortion of Anta's ESG risk assessment system, not individual oversight. Designed for risk prevention, the framework has been reduced to a routine compliance tool; its function has shifted from identifying ecological risks to producing formal compliance documentation. Critical risks were consequently ignored: slow material degradation under high-altitude, low-temperature conditions, the fragility of plateau grasslands, and potential disruption to rare wildlife habitats. These concerns were excluded from the checklist because addressing them would have obstructed the scheduled marketing event.When compliance checks are treated as risk assessment, management can easily believe ESG risks are under control—when, in fact, they have simply been ignored. COSO's 2023 guidance makes a different demand: ESG risk assessment should evaluate material strategic impacts, not just confirm compliance. Anta did the opposite [23].

At the control activities level, the same gap between policy and practice was evident. Anta had a formal biodiversity conservation policy on the books. But it was never built into the approval process for marketing events. Arc'teryx China made decisions autonomously, yet the group's three-tier ESG structure, designed to govern from the top, exercised no real constraint—ESG governance penetration had failed at the most basic level. This disconnect between policy and practice stems from three factors: broken transmission of institutional requirements, distorted incentives at the sub-brand level, and a lack of effective checks and balances for the ESG function.

5.3.2. Risk transmission mechanism

Flaws in Anta's control environment and control activities directly raise the auditor's control risk assessment, which in turn heightens the risk of material misstatement. They also leave open a series of accounting questions—unrecorded ecological compensation liabilities, possible goodwill impairment tied to the decline in Arc'teryx's brand value, and undisclosed contingent liabilities—each a potential source of misstatement.

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Beyond the direct impact on control risk, the "rating halo" distorts auditors' risk judgments in a more subtle way. MSCI maintained Anta's AA rating throughout the controversy, a status that can bias professional judgment. Rating agencies often award high ESG scores to firms with formally complete ESG systems, yet such ratings say little about whether those systems function effectively in practice. Kathan et al. document precisely this pattern: efforts to build a cosmetic ESG image boost ratings, while actual environmental performance is largely ignored—so a high rating does not imply low audit risk [12].

A high ESG rating does not guarantee low control risk. The Anta case is instructive: the group's ESG framework was robust enough to earn an AA rating, yet it did nothing to stop a subsidiary from staging a damaging event in an ecological hotspot. For auditors, this is the trap. Formal ESG systems can look impeccable on paper, but real governance gaps often hide at the brand level. An independent assessment of how ESG commitments are actually enforced should take priority over any reliance on rating scores alone.

6. Conclusion

The scandal's root cause lies in the governance structure itself. Anta's ESG report pledged to protect biodiversity. Arc'teryx, its subsidiary, then staged a fireworks show in the fragile Himalayan ecosystem. The parent group never reviewed or approved the event.

The group had a three-tier ESG governance structure on paper. In practice, its policies never reached the decision-making workflows of its brands. What resulted was de facto greenwashing—not an intentional scheme by management, but the consequence of controls too weak to catch a risky marketing decision before it escalated. The market punished it just the same: over HK$10 billion in value erased at the intraday peak. Rating platforms diverged sharply. MSCI maintained Anta's AA rating, while Wind recorded a steep drop in its event score. This gap has raised doubts about rating mechanisms that emphasize disclosure form over actual implementation. These deficiencies—a flawed control environment, risk assessment reduced to compliance self-verification, and absent effective control activities—prompted auditors to raise their assessments of both control risk and the risk of material misstatement. Notably, the ESG rating halo can induce cognitive bias. Rating agencies award high scores to firms with well-documented ESG frameworks, yet auditors who equate high ratings with low risk will underestimate the company's true underlying exposure.

Two practical implications follow. First, large corporate groups must embed their unified ESG systems into the operational procedures of subsidiary brands; rigorous integration is the cornerstone of effective governance. Second, auditors should treat inconsistencies between corporate pledges and actual practices as red flags for control environment weaknesses. They must look beyond rating scores and independently assess the real state of ESG governance.

Given the single-case design and the absence of direct evidence from auditors, the findings have limited generalizability, and the analysis remains theoretical. Future research could test the propositions advanced here—including the underestimation of risk under a rating halo—through multi-case comparisons or large-sample empirical work, thereby advancing this line of inquiry.

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