



Institutional pressures, information asymmetry and ESG-washing behavior: insights from a fast-growing economy

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Abstract

This study investigates how coercive, normative, and mimetic institutional pressures, along with information asymmetry, influence the emergence of ESG-washing behavior. Using Kompas100 and non-Kompas100 Index firms as the sampling frame, a purposive survey was conducted among managers involved in ESG reporting, yielding 327 valid responses. Data were analyzed using partial least squares structural equation modeling (PLS-SEM). The findings indicate that all three forms of institutional pressure significantly drive ESG-washing, with information asymmetry being the most influential. This suggests that limited transparency and inadequate oversight amplify the tendency toward symbolic ESG disclosures rather than substantive ESG disclosure. By integrating institutional theory with the concept of information asymmetry, this study provides a novel empirical perspective on ESG-washing in emerging market setting. This study advances the understanding of how institutional and informational forces interact to shape corporate legitimacy strategies, offering implications for policymakers, regulators, and stakeholders concerned with improving ESG reporting credibility in developing economies.

Keywords Institutional pressures · Information asymmetry · ESG-washing behavior · Indonesia

Introduction

Over the past decade, Environmental, Social and Governance (ESG) reporting has evolved from a voluntary initiative rooted in social responsibility into a global norm shaped by market expectations (Deng et al. 2025; Metelytsia et al. 2025). Firms are increasingly compelled to disclose their ESG practices, not only to comply with regulations but also to gain legitimacy, enhance stakeholder trust and protect

their corporate reputation (Biju et al. 2025; Mao et al. 2024; Venturelli et al. 2025). Many firms have adopted international frameworks, such as the Global Reporting Initiative (GRI), to structure their disclosures and integrate sustainability reporting into annual communications (Ruggeri et al. 2025). These disclosures play a pivotal role in shaping stakeholder perceptions, influencing investment decisions, and affecting firm valuations and long-term performance.

However, the growing institutionalization of ESG reporting has introduced new challenges. Firms face increasing pressure from investors, regulators, and consumers to exhibit responsible behavior and demonstrate a commitment to net-zero emissions, social equity, and ethical governance (Chakraborty et al. 2026; Zhang et al. 2025). This pressure can incentivize superficial or symbolic compliance, manifesting in what is known as ESG-washing (Eliwa et al. 2023; Todaro & Torelli, 2024). ESG-washing refers to the strategic exaggeration or misrepresentation of ESG efforts, wherein firms present themselves as environmentally or socially responsible without delivering tangible or measurable improvements (Chen et al. 2025; Huang et al. 2025; Todaro & Torelli, 2024). This divergence between reported ESG intentions and actual performance undermines the

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credibility of ESG disclosures and raises concerns among stakeholders, particularly when ESG data are difficult to standardize, verify and compare (Eliwa et al. 2023; Mao et al. 2024).

ESG-washing cases are becoming increasingly visible across all industries. From overstated emissions claims in airlines and fashion to exaggerated social impact initiatives in technology and finance, evidence suggests that ESG-washing is more widespread than previously assumed (Carè et al. 2025; Xu et al. 2025). Despite these incidents, scholarly inquiries into the underlying drivers of ESG-washing remain limited. Prior research has primarily focused on decoupling analyses that examine the gaps between disclosure and actual ESG performance (Chen et al. 2025; Eliwa et al. 2023; Venturelli et al. 2025). While insightful, these studies often overlook deeper organizational and contextual factors, such as institutional pressures, regulatory voids, or information asymmetry, that may enable or perpetuate ESG-washing practices.

Moreover, existing ESG-washing literature has predominantly focused on firms operating in developed economies, particularly in the European Union, North America and China (Forliano et al. 2025; Huang et al. 2025; Ziolo et al. 2024). Very few studies have investigated ESG-washing dynamics in emerging markets, which are characterized by weaker regulatory enforcement, limited public scrutiny, and more pronounced institutional voids (Jatmiko et al. 2025; Pratama et al., 2025). Given the rapid growth of ESG investing in developing economies, understanding the structural and institutional conditions that contribute to ESG-washing is both timely and necessary.

To address this gap, this study investigates the drivers of ESG-washing in the context of a developing country, Indonesia. As Southeast Asia's largest economy, Indonesia presents a compelling setting for exploring these dynamics. Although the government and capital market authorities have recently intensified their focus on sustainable development and ESG transparency, regulatory enforcement remains inconsistent (Jatmiko et al. 2025; Pratama et al., 2025). ESG reporting in Indonesia remains largely voluntary and varies widely in terms of quality and scope. Moreover, Indonesian firms face mounting institutional pressure from regulatory bodies, industry associations, and global investors, which may prompt firms to conform symbolically rather than substantively, thereby increasing the risk of ESG-washing.

Drawing on institutional theory, we conceptualize these institutional pressures through three main channels (Can and Turker 2025; Zhang et al. 2025): coercive (e.g., government and regulatory mandates), normative (e.g., societal and professional expectations), and mimetic (e.g., imitation of leading firms' environmental, social, and governance

strategies) pressures. While these forces are often intended to promote sustainable business practices, they may inadvertently incentivize superficial ESG behavior in the absence of strong enforcement and clear accountability. In addition, this study considers information asymmetry, the imbalance of ESG-related knowledge between firms and external stakeholders, to be a critical enabler of ESG-washing. When stakeholders cannot independently verify ESG disclosures, firms may have greater latitude to selectively disclose or misrepresent information, undermining the integrity of ESG communication. In markets such as Indonesia, where third-party assurance of ESG reports is rare and independent data sources are limited, information asymmetry can significantly amplify the potential for ESG-washing. Accordingly, we pose the following research question: *To what extent do institutional pressures and information asymmetry influence ESG-washing behavior among firms listed on the Indonesia Stock Exchange (IDX)?*

This study makes several contributions to the literature. First, while previous studies on ESG-washing have predominantly focused on firms in developed economies such as the European Union, North America, and China (Forliano et al. 2025; Huang et al. 2025; Ziolo et al. 2024), our research extends this stream of inquiry to the context of a developing country (Indonesia). In doing so, we reveal how ESG-washing may manifest differently under conditions characterized by weaker regulatory enforcement, limited civil society oversight, and pronounced institutional voids. By highlighting the symbolic actions taken by firms under external ESG-related pressure, our study underscores how companies strategically comply with stakeholder expectations without making substantive improvements to sustainability performance.

Second, our study advances prior research and helps reconcile conflicting findings in the literature. For example, Zhang et al. (2025) and Zhou and Chen (2024) reported that institutional pressures negatively and significantly affect corporate green-washing strategies in China. In contrast, Chakraborty et al. (2026) found that institutional pressure positively and significantly influenced corporate green-washing in India. These contradictory results call for further investigation. In response, this study contributes to the literature by examining these dynamics in a different institutional setting and providing further empirical evidence. Moreover, we extend prior work in this area (Can and Turker 2025; Zhou and Chen 2024) by jointly analyzing the effects of institutional pressure and information asymmetry on ESG-washing behavior within a single integrated framework.

Finally, this study contributes to the literature by showing that ESG-washing behavior is shaped not only by institutional pressures but also by informational conditions



that enable such symbolic compliance. This study extends institutional theory by illustrating how legitimacy-seeking responses may emerge through the interaction of external pressures and information asymmetry, particularly in emerging market contexts.

The remainder of this paper is organized as follows. First, we present the theoretical foundation by outlining institutional theory and reviewing relevant prior studies on ESG-washing, which serve as the basis for developing the research hypotheses. Next, we describe the research procedures and methodological approach in detail. The empirical findings are presented in this section. Finally, we discuss the results, emphasizing their theoretical contributions and managerial implications for policies and corporate practice.

Theoretical foundation and hypothesis development

Institutional theory

Institutional theory, as advanced by DiMaggio and Powell (1983), offers a compelling framework for understanding why organizations often adopt similar structures and practices, particularly in response to market expectations. This theory posits that organizational behavior within a given institutional field tends to converge over time, a process known as institutional isomorphism, as firms seek legitimacy from key stakeholders (Cornelissen et al. 2015; Eitrem et al. 2024). Scott (1995) elaborated on this by identifying three primary mechanisms that drive isomorphic change: coercive pressures stemming from formal regulations or mandates, normative pressures arising from professional norms and standards, and mimetic pressures rooted in the tendency to emulate successful peers during uncertainty (DiMaggio and Powell 2000).

A central insight of institutional theory is the recognition that firms may adopt institutionalized practices not for operational efficiency but to signal conformity with prevailing societal norms and expectations. This often results in a phenomenon known as decoupling, where symbolic gestures or formal policies, such as ESG disclosures, are implemented to demonstrate legitimacy, while the actual operational commitment to such practices remains limited (Liu et al. 2025; Roh et al. 2025). This symbolic alignment without substantive action is particularly relevant to ESG-washing behavior, where companies may appear to embrace ESG values publicly but fall short in practice (Todaro & Torelli, 2024).

Institutional theory has been widely used in empirical ESG research to explain how external pressures shape firms' sustainability report. For instance, Zhang et al. (2025) noted that institutional theory helps reveal how organizations

strategically manage corporate environmental information disclosure in response to stakeholder scrutiny. Similarly, Chakraborty et al. (2026) demonstrate that even in environments characterized by weak institutional infrastructure or "institutional voids," firms may engage in greenwashing due to perceived legitimacy benefits. In this study, institutional theory provides a robust lens for examining ESG-washing behavior among firms listed on the IDX. As firms respond to increasing institutional demands, they may feel compelled to demonstrate ESG compliance, even if such actions are symbolic rather than substantive actions.

Prior research on ESG-washing

A growing body of research has begun to unravel the complexities of ESG-washing behavior across diverse organizational and institutional contexts. One of the earliest empirical studies, conducted by Eliwa et al. (2023), explored how board gender diversity affects ESG decoupling with religiosity as a moderating variable. Their findings suggest that firms with more gender-diverse boards are less likely to decouple ESG disclosures from actual performance, particularly in countries with low levels of religiosity. Extending this line of inquiry, Li and Chen (2024) examine the impact of executive pay gap on corporate greenwashing. They found that larger disparities in executive compensation tend to exacerbate ESG-washing behavior, suggesting a link between internal governance inequality and sustainability.

Todaro and Torelli (2024) analyzed firms transitioning to circular economic models and questioned whether their sustainability efforts were substantive or symbolic. Their study emphasizes the prevalence of distorted ESG communication in firms that claim to undergo sustainable transition. Similarly, Chen et al. (2025) investigated how ESG-washing contributes to the divergence in ratings among ESG rating agencies, revealing that firms with a greater tendency to misrepresent ESG practices exhibit wider discrepancies in their ESG scores.

Further studies have explored internal organizational dynamics. Deng et al. (2025) found that top management team stability is negatively associated with ESG greenwashing, operating through reduced agency costs and improved disclosure quality. Kathan et al. (2025) critically examined the reliability of ESG scores, demonstrating that while high ESG scores correlate positively with communicated environmental performance, they negatively correlate with actual environmental outcomes, raising concerns about the credibility of ESG ratings as indicators of the true environmental impact.

On the innovation front, Ma et al. (2025) found that green innovation deters green washing and simultaneously enhances corporate performance and environmental



protection, leading to a “win-win” outcome. Meanwhile, Niu et al. (2025) show that CEO turnover is a corrective governance mechanism that reduces greenwashing practices. Venturelli et al. (2025) investigate ESG-washing in the banking sector and reveal that inconsistencies in environmental disclosures elevate reputational risks, whereas selective over-disclosure of social issues might reduce them. Wu et al. (2025) provided a broader organizational lens by demonstrating that ESG-washing undermines organizational resilience and increases financial risk by impairing innovation, tightening financing constraints, and diminishing competitiveness.

While previous studies have substantially enriched our understanding of ESG-washing, several gaps remain. First, much of the empirical literature has concentrated on firm-level antecedents such as governance structures, executive incentives, and innovation, while relatively limited attention has been paid to broader institutional forces, including coercive, normative, and mimetic pressures. Second, most existing studies are situated in developed economies, where institutional frameworks are more robust, and transparency standards are more established. In contrast, emerging markets characterized by institutional voids remain underexplored. This study addresses these gaps by examining how institutional pressures and information asymmetry drive ESG-washing among firms listed on the IDX.

Coercive pressures and ESG-washing behavior

Institutional theory posits that firms are driven to conform to external expectations to secure legitimacy and access critical resources, particularly through coercive pressure stemming from regulations and government mandates (DiMaggio and Powell 2000; Scott 1995). However, the decoupling literature suggests that coercive pressure does not always result in substantive organizational change. When regulatory demands are not supported by strong monitoring systems, credible sanctions, and effective enforcement capacity, firms may separate formal compliance from actual operational practices (Delmas and Burbano 2011). Under such conditions, organizations often adopt symbolic disclosures and ceremonial structures to maintain legitimacy while avoiding the costs associated with genuine ESG transformation. This mechanism is especially relevant in institutional environments characterized by institutional voids, fragmented governance structures, and weak enforcement systems, where firms face pressure to appear compliant without equivalent pressure to implement substantive ESG practices.

This theoretical mechanism is particularly applicable to emerging markets such as Indonesia, where ESG reporting remains largely voluntary, enforcement mechanisms are still evolving, and institutional support structures are relatively

underdeveloped (Jatmiko et al. 2025; Luhglatno et al. 2026; Pratama et al., 2025). In such contexts, coercive pressures may unintentionally encourage ESG-washing behavior because firms can satisfy legitimacy demands through symbolic compliance rather than substantive implementation (Bhuiyan et al. 2023). When monitoring institutions are fragmented and sanctions remain uncertain, companies are more likely to rely on impression management and selective disclosure to demonstrate their alignment with regulatory expectations (Delmas and Burbano 2011; Todaro & Torelli, 2024). Consequently, coercive isomorphism may lead to decoupled responses, where firms formally adopt ESG-related practices while their underlying organizational behavior remains unchanged (Luhglatno et al. 2026; Wang et al. 2025).

Importantly, these institutional characteristics differ from those in contexts such as China and several developed economies, where ESG regulations are generally accompanied by stronger monitoring capacity, stricter disclosure requirements, and more credible enforcement systems than in developing countries. In such environments, firms face greater reputational and regulatory risks for symbolic compliance alone, making coercive pressure more likely to induce substantive ESG practices (Forliano et al. 2025; Huang et al. 2025; Ziolo et al. 2024). In contrast, the Indonesian context provides greater flexibility for firms to manage external legitimacy perceptions through symbolic ESG disclosures. Therefore, this study extends institutional theory by arguing that the effect of coercive pressure depends on institutional conditions, particularly the extent to which institutional voids enable the decoupling of symbolic disclosure from substantive organizational behavior.

Given the fragmented enforcement landscape, firms may treat ESG disclosures primarily as symbolic gestures aimed at satisfying regulators and protecting organizational legitimacy rather than as reflections of a genuine ESG commitment (Can and Turker 2025; Roh et al. 2025; Zhang et al. 2025). The fear of reputational damage or exclusion from government-backed incentives may further encourage firms to mimic compliance behavior, even when their actual ESG performance is limited. Thus, coercive pressure may paradoxically increase ESG-washing behavior in weak institutional environments. Accordingly, we propose the following hypothesis:

H1 *Coercive pressures have a positive effect on ESG-washing behavior.*

Normative pressures and ESG-washing behavior

Normative pressures stem from the expectations of professional communities, civil society, investors, and the broader



public regarding what constitutes appropriate corporate behavior (Scott 1995). Within institutional theory, normative pressures are expected to encourage firms to adopt socially accepted ESG practices to maintain legitimacy and reputational standing. However, the decoupling literature suggests that the effectiveness of normative pressure depends on whether stakeholder expectations are supported by strong verification mechanisms and credible reputational consequences (DiMaggio and Powell 2000; Jugend et al. 2024). When external audiences lack the capacity to evaluate actual ESG performance, firms may satisfy normative expectations through symbolic rather than substantive, organizational change. In such situations, ESG-related narratives become legitimacy tools, rather than indicators of authentic sustainability.

This mechanism is particularly relevant in institutional environments characterized by information asymmetry, fragmented stakeholder monitoring and underdeveloped governance systems. In emerging economies, normative expectations surrounding ESG often evolve more rapidly than the institutional infrastructure required to verify compliance (Chakraborty et al. 2026; Kathan et al. 2025). Consequently, firms may face increasing social pressure to appear environmentally and socially responsible while simultaneously operating in environments where inconsistent monitoring reduces the risks associated with symbolic conformity (Bhuiyan et al. 2023). Under these conditions, normative pressures may unintentionally strengthen ESG-washing incentives because firms can gain reputational benefits by appearing to be aligned with sustainability norms without fully implementing substantive ESG practices or policies.

This logic is especially applicable to Indonesia, where ESG norms and sustainability expectations are becoming increasingly visible, yet external monitoring and enforcement mechanisms remain relatively weak (Luhglatno et al. 2026). Unlike contexts with stronger institutional oversight, where media scrutiny, investor activism, and professional monitoring create reputational penalties for symbolic ESG behavior (Chen et al. 2025; Venturelli et al. 2025), stakeholder oversight in Indonesia remains comparatively fragmented and uneven across industries. Consequently, firms may perceive symbolic ESG disclosures as sufficient to secure legitimacy with external stakeholders (Pratama et al., 2025). In this context, normative pressures are less likely to function as disciplinary mechanisms and more likely to encourage ceremonial conformity to maintain organizational reputation under limited accountability conditions.

Moreover, while media organizations, advocacy groups, and professional associations increasingly promote ESG awareness, their ability to consistently detect and expose ESG-washing remains constrained (Long et al. 2025; Ren

et al. 2024). This creates an institutional environment in which firms may strategically exploit information asymmetries by projecting an image of sustainable leadership, while substantive ESG implementation remains limited. Accordingly, this study extends institutional theory by arguing that normative pressures may increase ESG-washing propensity when institutional voids weaken stakeholder monitoring and enable decoupling symbolic ESG communication from actual organizational practices. Based on this reasoning, we hypothesized the following:

H2 *Normative pressures have a positive effect on ESG-washing behavior.*

Mimetic pressures and ESG-washing behavior

Mimetic pressures refer to the tendency of organizations to imitate the practices of perceived successful or legitimate peers when faced with uncertainty (Scott 1995). In the ESG domain, firms often emulate the sustainability strategies and disclosure practices of industry leaders to maintain competitiveness, legitimacy, and investor confidence (Li and Deng 2025; Zhao and Lee 2024). However, institutional theory suggests that imitation does not necessarily result in substantive convergence. The organizational outcomes of mimetic pressure depend on whether firms imitate the underlying operational practices or merely replicate visible legitimacy signals. When external audiences primarily evaluate firms based on symbolic ESG communication rather than verifiable ESG performance, organizations may imitate superficial disclosure practices while avoiding substantive sustainability transformation (Bhuiyan et al. 2023; Jugend et al. 2024).

This mechanism is particularly salient in conditions of institutional uncertainty and weak verification systems. In environments where ESG standards remain ambiguous and monitoring systems are fragmented, firms often rely on peer behavior as a benchmark for appropriate organizational conduct (DiMaggio and Powell 2000). Consequently, imitation may center on highly visible ESG narratives, sustainability reports, and reputation-signaling strategies rather than costly operational changes. Institutional voids further reinforce this tendency because weak oversight reduces the likelihood that symbolic ESG claims will be challenged or sanctioned (Chakraborty et al. 2026; Luhglatno et al. 2026). Under such conditions, mimetic pressures may unintentionally normalize ESG-washing behavior by diffusing ceremonial compliance practices across organizations.

These dynamics are especially relevant in Indonesia, where ESG regulations and disclosure frameworks are still evolving and public scrutiny remains uneven across industries (Jatmiko et al. 2025; Luhglatno et al. 2026). Unlike



institutional contexts characterized by stronger regulatory coordination, standardized ESG benchmarks, and active third-party verification, firms in Indonesia operate under greater uncertainty regarding what constitutes credible ESG performance. Consequently, organizations may increasingly depend on imitation as a legitimacy-seeking strategy (Chakraborty et al. 2026; Todaro & Torelli, 2024). When leading or highly visible firms rely on symbolic ESG narratives to attract investors and enhance their reputation, other firms may replicate these practices to avoid appearing to be institutionally misaligned. Thus, mimetic pressures may encourage the diffusion of symbolic disclosure patterns rather than substantive sustainability practices (Wang et al. 2025).

Moreover, managers may perceive symbolic imitation as a low-cost mechanism for maintaining legitimacy, particularly when substantive ESG transformation requires substantial organizational resources and long-term commitment (Todaro & Torelli, 2024). Accordingly, this study extends institutional theory by arguing that mimetic pressures are more likely to increase ESG-washing propensity when institutional voids weaken verification mechanisms and enable the replication of symbolic legitimacy signals across firms to engage in ESG-washing. In such environments, imitation becomes a mechanism through which ceremonial ESG practices are reproduced and normalized across organizational fields. Based on these insights, we propose the following hypothesis:

H3 *Mimetic pressures have a positive effect on ESG-washing behavior.*

Information asymmetry and ESG-washing behavior

Information asymmetry arises when firms possess more or more accurate information about their ESG activities than external stakeholders, thereby enabling organizations to shape perceptions of their sustainability performance is perceived (He et al. 2022). In ESG reporting, this condition is intensified by the discretionary nature of sustainability disclosures, inconsistent reporting standards, and the technical complexity of ESG information (Xu et al. 2025). From an institutional theory perspective, information asymmetry increases the likelihood of decoupling because stakeholders often lack the capacity to directly observe whether disclosed ESG commitments reflect substantive organizational practices (Scott 1995). Under these conditions, firms may strategically use ESG communication to construct legitimacy while concealing operational shortcomings, thereby separating symbolic representation from actual ESG performance.

The decoupling literature suggests that information asymmetry becomes particularly influential when

institutional environments lack strong assurance systems, standardized verification procedures and credible external monitoring (Bothello et al. 2023; Eliwa et al. 2023). In such contexts, external audiences face difficulties distinguishing authentic sustainability efforts from symbolic signaling. Consequently, firms may perceive that the reputational and financial benefits of overstating ESG performance outweigh the risks of detection and sanctions. Thus, information asymmetry functions not only as an informational imbalance but also as a structural condition that enables symbolic compliance and impression-management.

These conditions are especially relevant in Indonesia, where ESG disclosure frameworks and third-party assurance mechanisms are still being developed (Jatmiko et al. 2025; Pratama et al., 2025). Unlike contexts characterized by stronger disclosure standardization, mandatory assurance requirements, and active stakeholder verification, Indonesian firms operate in an environment where ESG information is often difficult to validate. Limited monitoring capacity and inconsistent disclosure quality reduce stakeholders' ability to assess the credibility of ESG claims (Luhglatno et al. 2026). Consequently, firms may exploit informational advantages by selectively disclosing favorable sustainability information while minimizing attention to poor ESG performance. In this context, information asymmetry increases the feasibility of maintaining legitimacy through symbolic ESG narratives rather than substantive organizational change (He et al. 2022; Venturelli et al. 2025).

Accordingly, this study extends the institutional and decoupling perspectives by arguing that information asymmetry strengthens ESG-washing propensity when institutional voids weaken stakeholders' capacity to evaluate the authenticity of corporate ESG disclosure. Under such conditions, firms are better able to decouple symbolic ESG communication from actual sustainability practices while continuing to secure legitimacy and reputation. Based on these arguments, we propose the following hypothesis:

H4 *Information asymmetry has a positive effect on ESG-washing behavior.*

Figure 1 presents the research model underpinning this study's hypotheses.

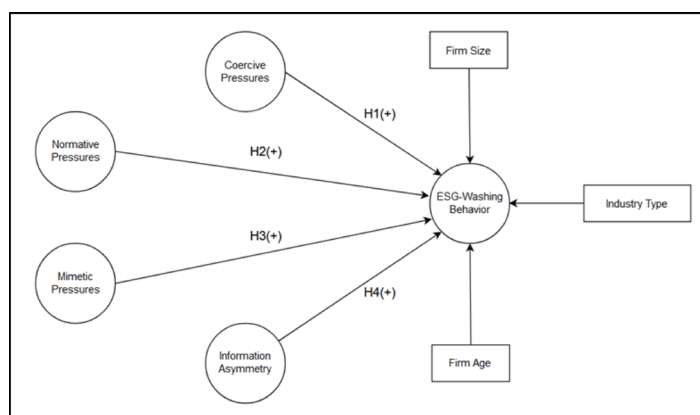
Research procedures

Sampling and data collection strategy

This study sought to gather high-quality, context-specific data from environmentally and socially accountable firms



Fig. 1 Visual representation of the research model showing relationships between latent variables



operating in Indonesia's dynamic economic landscape. Recognizing the critical role of corporate transparency and ESG performance, this study strategically focused on firms with demonstrable public accountability. Rather than relying solely on institutional databases or third-party directories, the research team used LinkedIn to establish direct contact with managerial professionals engaged in sustainability-oriented decision-making (Contreras et al. 2025; Roulin and Levashina 2019). This professional platform offers access to a diverse range of qualified individuals holding key roles, such as financial, environmental, and operational managers, who are typically positioned to provide informed responses to ESG initiatives and related performance measures (Davis et al. 2020).

A purposive sampling technique was employed to identify participants based on their firm profiles and job positions (Schindler 2022). The selection of firms was initially guided by the Kompas100 Index, which includes some of the largest and most visible companies on the IDX. These firms have historically been under close scrutiny by stakeholders and regulators for their ESG disclosure practices. Nevertheless, while this index served as the initial reference point, the final respondent pool also incorporated professionals working in firms outside the Kompas100 grouping, provided they were involved in ESG reporting or sustainability finance (Eichhorn 2021). This broader inclusion strategy enabled the study to capture insights from a wider spectrum of corporate experiences across Indonesia's industrial sectors. In addition, this approach was intended to enhance the representativeness and diversity of the sample and help to assess potential sample-selection bias. Our analysis revealed no significant differences between the respondents from Kompas100 firms and those from non-Kompas100 firms, providing further evidence that sample selection bias was not a concern in this study.

Questionnaire dissemination was facilitated through QuestionPro, an online platform chosen for its security features, mobile compatibility, and ability to manage anonymous and large-scale data collection. Each LinkedIn

invitation included a link to the survey, preceded by a brief introduction outlining the purpose of the study and a digital consent form to ensure ethical compliance and confidentiality (Aguinis 2024; Schindler 2022). Data were collected over a 14-day window from May to June 2025, with three scheduled follow-up messages sent to increase the participation rates.

Multiple methodological safeguards were employed to ensure data quality. First, the survey instrument was structured to prevent cognitive fatigue by grouping conceptually related items and varying the format of the questions. Next, the sequence of predictor and criterion variables was randomized to reduce common method variance, alongside the insertion of an attention-check item to screen for disengaged respondents (Bowling et al. 2021; Podsakoff et al. 2024). Speed checks and response audits were conducted to detect rapid completions, straight lines, and other signs of invalid input (Bowling et al. 2023). After screening, 327 responses were deemed usable for analysis. The average completion time was 10 min, and no incomplete entries were included.

Sample adequacy was confirmed using a power analysis with G*Power 3. With an expected effect size of 0.15, four predictors, and a statistical power level of 0.95, the required sample size was determined to be 129, thereby confirming that the final dataset ($n = 327$) was more than sufficient for a robust structural equation modeling (Lopes de Sousa Jabbour et al. 2022).

The respondent profiles summarized in Table 1 indicate that the sample reflected a well-experienced cohort of professional. The gender distribution was 59.94% male and 40.06% female. The 39–46 years age group was the most dominant, representing more than half of the participants. In terms of academic credentials, nearly two-thirds of the respondents held bachelor's degrees, with a significant proportion holding postgraduate qualifications. Most had extensive tenure in corporate roles, with over 50% having more than 18 years of experience, reinforcing the credibility and relevance of their input for this ESG-focused study.

Table 1 Summary of participants' demographic characteristics

Characteristic	Category	Frequency (f)	Proportion (%)
Gender	Male	196	59.94%
	Female	131	40.06%
Education level	High school, equivalent diploma	5	1.53%
	Bachelor's degree	212	64.83%
	Master's degree	79	24.16%
	Doctorate	31	9.48%
Professional experience	Less than 8 years	13	3.98%
	9 to 17 years	94	28.75%
	18 to 25 years	167	51.07%
	More than 25 years	53	16.21%
Age	30 years or less	12	3.67%
	31–38 years	76	23.24%
	39–46 years	171	52.29%
	47 years or more	68	20.80%
Job position	Sustainability manager	79	24.16%
	Environmental manager	73	22.32%
	Operations manager	68	20.80%
	Financial manager	60	18.35%
	Health, safety, and environment manager	47	14.37%

Measurement and scale

This study employed a structured approach to develop a reliable and contextually relevant measurement tool, emphasizing adaptation rather than the creation of items. Instead of designing new scales from scratch, this study incorporated well-established instruments sourced from prior empirical studies. Each scale was carefully evaluated for conceptual alignment with the study's constructs and tailored to fit the Indonesian organizational and environmental context (Heggstad et al. 2019). Given that the original items were in English, a bilingual researcher with specialized knowledge of finance and applied linguistics conducted a forward translation. This step ensured that the translated items maintained conceptual and linguistic precision.

Before administering the main survey, we conducted multiple pre-administration assessments to ensure the appropriateness and validity of the adapted instruments. A cognitive debriefing exercise was first conducted with two industry professionals to examine their comprehension and response interpretation. Their input led to modifications that enhanced item flow and reduced ambiguity (Aguinis 2024; Schindler 2022). Subsequently, a pilot test with a group of 36 postgraduate students was conducted to evaluate the internal consistency and construct validity of the scales. The results demonstrated robust psychometric properties, as all constructs yielded Cronbach's alpha coefficients above

0.855 and factor loadings greater than 0.800, supporting item reliability (Table 2).

The final instrument used a 5-point Likert scale (1 = "strongly disagree" to 5 = "strongly agree") to capture the intensity of respondents' perceptions of the program's effectiveness. The core theoretical constructs assessed included coercive pressures with four adapted items from Colwell and Joshi (2013), normative pressures with three items from the same source, mimetic pressures measured using four indicators also derived from Colwell and Joshi (2013), information asymmetry adapted from He et al. (2022) using four items, and ESG-washing behavior measured with four items based on the framework by Ferrón-Vílchez et al. (2021). To enhance response quality, the survey underwent a final round of layout harmonization and language editing before deployment.

Control variables

To reduce potential confounding effects, this study incorporated firm size, firm age, and industry type as control variables. Prior research, including studies by Can and Turker (2025), Roh et al. (2025), and Scaliza et al. (2022), suggests that these factors can influence the association between institutional pressures, information asymmetry, and ESG-washing behavior, making their inclusion in this study appropriate. Firm size was divided into four classifications: small, medium, large, and very large, based on the number of employees. Firm age was grouped into four ranges: up to 10, 11–20, 21–30, and more than 30 years. Finally, the industry type was coded as 0 = non-manufacturing and 1 = manufacturing. We used categorical rather than continuous scales to measure the control variables, as this is the most common approach adopted in prior research and is recommended by experts such as Hünermund and Louw (2025) and Shiao et al. (2024). In addition, continuous scales may not accurately capture these variables, given the unequal interval distances across units.

Data analysis

Data analysis was conducted using partial least squares structural equation modeling (PLS-SEM), a robust multivariate technique that prioritizes predictive accuracy and model estimation under flexible conditions. PLS-SEM is particularly well-suited to empirical research where the primary goal is to understand causal-predictive relationships among constructs rather than to test for exact model-data fit. This method is widely recommended when the theoretical foundation is still developing or when the relationships between constructs are highly uncertain and the dataset is of moderate size (Cook and Forzani 2024; Henseler 2021).



Table 2 Results of construct-level reliability and validity testing

Measurement item	Indicator	FacAn	StdFL	AVE	MaxSV	AvgSV	ω	ρ_c
A) Coercive Pressures (Source: Adapted from Colwell and Joshi 2013)				0.641	0.268	0.241	0.870	0.870
Our company risked legal action if it failed to comply with mandated ESG-related regulations, including environmental, labor, and governance standards.	CRP1	0.800	0.699					
Our company understood that violating ESG principles—such as engaging in environmentally harmful practices or unfair labor treatment—could result in substantial fines and sanctions.	CRP2	0.807	0.693					
ESG-related infractions by our company were likely to lead to unfavorable evaluations from industry analysts, investors, or rating agencies.	CRP3	0.918	0.938					
Non-compliance with national or regional ESG regulations often resulted in negative consequences for our company, including reputational damage and regulatory scrutiny.	CRP4	0.873	0.846					
B) Normative Pressures (Source: Adapted from Colwell and Joshi 2013)				0.718	0.276	0.254	0.883	0.883
Industry organizations and professional bodies have urged our company to adopt more responsible and sustainable ESG practices across environmental, social, and governance dimensions.	NRP1	0.918	0.897					
There is a strong expectation within our industry that companies like ours demonstrate commitment to ESG responsibilities, including environmental stewardship, social accountability, and ethical governance.	NRP2	0.889	0.816					
Adhering to ESG principles is considered a fundamental standard for maintaining legitimacy and participation within our industry.	NRP3	0.895	0.827					
C) Mimetic Pressures (Source: Adapted from Colwell and Joshi 2013)				0.772	0.312	0.280	0.932	0.932
Our company faces strong pressure from stakeholders to enhance its performance across environmental, social, and governance (ESG) dimensions by adopting best practices.	MTP1	0.928	0.914					
Customers regularly demand that our company adopt more responsible and sustainable ESG practices, including ethical labor treatment and environmental protection.	MTP2	0.912	0.877					
Regulatory authorities impose strict requirements on our company's conduct regarding environmental impact, social responsibility, and governance transparency.	MTP3	0.894	0.849					
Shareholders expect our company to implement sustainable strategies that align with ESG principles, such as climate action, social equity, and ethical corporate governance.	MTP4	0.907	0.874					
D) Information Asymmetry (Source: Adapted from He et al. 2022)				0.595	0.314	0.243	0.855	0.855
The external public is not adequately informed about our company's performance on ESG issues.	IAS1	0.831	0.773					
It is difficult for external stakeholders to evaluate the extent of our company's ESG commitments and outcomes.	IAS2	0.837	0.770					
Shareholders face challenges in monitoring and understanding the company's ESG-related initiatives and activities.	IAS3	0.826	0.760					
Overall, the company's ESG disclosures are transparent and understandable to shareholders. (R).	IAS4	0.844	0.783					
E) ESG-Washing Behavior (Source: Adapted from Ferron-Vílchez et al., 2021)				0.644	0.312	0.289	0.875	0.875
Our company presents ambiguous or unclear messages regarding its ESG practices, including environmental, social, and governance efforts	EWB1	0.875	0.783					
Our company provides unverifiable or unsupported claims about its ESG achievements.	EWB2	0.867	0.757					
Our company exaggerates its performance in ESG areas to appear more responsible than it actually is.	EWB3	0.922	0.875					
Our company selectively discloses its ESG initiatives or conceals information related to environmental, social, or governance misconduct.	EWB4	0.878	0.789					

FacAn refers to factor analysis; *StdFL* indicates standardized factor loadings, *AVE* stands for average variance extracted, *MaxSV* denotes the maximum shared variance, *AvgSV* represents average shared variance, ω corresponds to McDonald's Omega, ρ_c indicates composite reliability



A key advantage of PLS-SEM lies in its tolerance for data irregularities, including non-normality and multicollinearity, making it a practical option in real-world settings where ideal data assumptions often do not hold. In contrast to CB-SEM, which requires strict assumptions about normal distribution and large samples, PLS-SEM provides greater flexibility by focusing on the variance explained in endogenous constructs rather than the reproduction of covariance matrices. Moreover, this approach enables the simultaneous assessment of measurement reliability and structural relationships, allowing for the examination of both direct and indirect effects within a unified framework.

Results

Preliminary data assessment

Before proceeding with the structural model estimation via PLS-SEM, a comprehensive evaluation of the data suitability was conducted. Although PLS-SEM does not impose strict distributional assumptions, understanding the nature of a dataset is essential for interpretation. Accordingly, the Cramér–von Mises test was applied to all variables, revealing mild deviations from normality ($p < 0.05$). Rather than treating this as a violation, these findings affirm the methodological fit of PLS-SEM, which accommodates non-normality more flexibly than covariance-based approaches do. To increase the statistical precision of the path estimates and inferential outputs, a bootstrapping procedure was executed with 10,000 replications. This approach not only accounts

for distributional irregularities but also generates bias-corrected confidence intervals and more robust significance levels, aligning with the best practices in variance-based modeling (Streukens and Leroi-Werelds 2016).

In terms of deviant cases, we inspected potential outliers using standardized Z-scores. No observations exceeded the ± 2.58 threshold, indicating the absence of undue influence from extreme values (Wooldridge 2020). Homoscedasticity, the assumption that residual variances remain stable across levels of predicted outcomes, was tested using the chi-square test, which returned no evidence of heteroscedasticity.

The dataset was reviewed using basic descriptive statistics. The means for all measured constructs were below 5, while the standard deviations (SD) remained under 2, suggesting moderate response variability without extreme clustering (Murphy 2021). Potential multicollinearity was assessed using intercorrelation matrices and corrected variance inflation factor (CVIF) diagnostics. The inter-construct correlations were all below 0.561, and the CVIF values remained well below the conservative threshold of 3.3 (Lindner et al. 2022), confirming that multicollinearity was not an issue for the proposed model. The complete diagnostic results are listed in Table 3.

Addressing non-response bias, common method variance and social desirability bias

To safeguard the credibility of the findings, this study implemented several procedures aimed at detecting and mitigating potential biases that threaten survey-based research. One such concern is non-response bias, which can arise if the characteristics of the participants differ systematically from those of the non-participants (Huang 2025). To investigate this issue, we compared the means of early and late-stage respondents. The absence of statistically significant differences between these two groups ($p > 0.05$) suggests that the likelihood of non-response bias affecting the results was minimal (Oscarsson and Arkhede 2020).

To address common method variance (CMV), which stems from the use of a single measurement method across all variables, this study adopted both procedural and statistical remedies. The survey design incorporated several features, such as varied item formats, randomized item sequences, and conceptual separation of independent and dependent variables, to minimize the respondent's ability to detect patterns and respond uniformly (Saxena et al. 2024). Statistically, we introduced a marker variable that was not theoretically related to the core constructs, and correlation tests confirmed that it did not account for a significant shared variance in the dataset. The minimal associations observed reinforce the assumption that the observed relationships reflect true construct interdependencies rather than

Table 3 Overview of discriminant validity, descriptive statistics, and correlations between latent variables

Latent variable	1	2	3	4	5
Coercive pressures	(0.85)	0.415**	0.498**	0.524**	0.499**
Information asymmetry	0.482	(0.85)	0.540**	0.434**	0.557**
Mimetic pressures	0.552	0.606	(0.85)	0.511**	0.561**
Normative pressures	0.594	0.500	0.563	(0.85)	0.527**
ESG-washing behavior	0.560	0.632	0.609	0.588	(0.85)
Mean	3.938	3.801	4.001	4.132	3.836
Standard deviation (SD)	0.549	0.586	0.618	0.581	0.538
Corrected variance inflation factor (CVIF)	1.557	1.509	1.728	1.597	–
Cramér–von Mises test	0.000	0.000	0.000	0.000	0.000

HTMT ratios are shown below the diagonal, whereas the upper triangle contains the correlation coefficients. Threshold values for HTMT are indicated in bold along the diagonal. Numbers 1, 2, 3, 4, and 5 refer to the variable names listed on the left-hand side. ** All construct correlations are significant at the 0.01 level (two-tailed)



artifacts of common measurement sources (Baumgartner et al. 2021).

Finally, we assessed the potential presence of social desirability bias (SDB) by employing an indirect questioning approach (Kwak et al. 2021; Ried et al. 2022). We invited 38 valid respondents who had participated in the main survey to take part in a post-hoc test to assess SDB. All questionnaire items for each construct were converted into an indirect-questioning format. Using a *t*-test, our analysis revealed no meaningful differences in the variable means between the responses obtained through third-person framing and those obtained through direct questioning. This suggests that SDB is unlikely to influence the measurements.

Construct validity assessment

To evaluate construct validity, this study assessed both convergent and discriminant validity. Convergent validity was supported by strong standardized factor loadings (StdFL), ranging from 0.693 to 0.938, which exceeded the recommended threshold of 0.60, with most indicators demonstrating high correlations with their designated constructs (Roos and Bauldry 2022). This pattern of strong item-to-construct associations provides empirical justification that the items adequately capture the intended constructs (Bandalos 2018). Moreover, the calculated average variance extracted (AVE) values surpassed the minimum benchmark of 0.50, implying that the majority of the variance in the observed variables was attributable to the latent constructs rather than measurement error.

In terms of discriminant validity, construct uniqueness was confirmed using several criteria. First, the AVE scores exceeded both the average shared variance (ASV) and the maximum shared variance (MSV), indicating minimal conceptual overlap. Second, the HTMT (heterotrait–monotrait) ratio of correlations was assessed to detect problematic levels of similarity (Franke and Sarstedt 2019). None of the HTMT values approached the threshold of 0.85, and the 95% confidence intervals around these estimates did not include the value of 1.0, both of which reinforce that the constructs are empirically distinct (Rönkkö and Cho 2022).

Construct reliability assessment

The internal consistency of the measurement model was rigorously evaluated to ensure precise and reliable measurement of each latent construct. Rather than relying solely on traditional reliability indicators such as Cronbach's alpha, this study utilized more robust alternatives, namely McDonald's Omega (ω) and composite reliability (ρ_c), which are better suited to confirm reliability in models involving reflective indicators with varying loadings. These indices

consider both the strength and distribution of the loadings, providing a more refined estimate of consistency. The computed values for all constructs surpassed the commonly accepted threshold of 0.70, aligning with the reliability standards in structural equation modeling (Nunnally and Bernstein 1994). Specifically, the ω and ρ_c values ranged between 0.855 and 0.932, as shown in Table 2, indicating that the items exhibited strong internal coherence and collectively formed a dependable measurement structure.

Assessing explanatory power

The model's ability to explain the variance in key outcome variables was assessed using the *R*-squared (R^2) statistic, which is a standard metric for evaluating the predictive relevance of structural equation models. In this case, the coefficient of determination for ESG-washing behavior (EWB) was calculated to be 33.9%, implying that approximately one-third of the variation in EWB could be attributed to the predictors of the model. This level of explained variance is considered moderate and meaningful, particularly in the context of behavioral and organizational studies, where complex real-world interactions among constructs typically result in modest R^2 values (Karch 2020).

Hypothesis assessment

The hypothesized paths were assessed using bootstrapped estimates to determine the strength and significance of the relationships among latent variables. The results indicate that ESG-washing behavior is significantly shaped by multiple institutional and informational factors. In particular, the influence of coercive ($\beta = 0.198$; SD = 0.070; $p = 0.002$), normative ($\beta = 0.269$; SD = 0.078; $p = 0.000$), and mimetic pressures ($\beta = 0.287$; SD = 0.082; $p = 0.000$), as well as information asymmetry ($\beta = 0.380$; SD = 0.088; $p = 0.000$), were found to be statistically significant, with all *p*-values below the conventional significance threshold (Table 4). Although these effects varied in magnitude, they consistently demonstrated a directional influence on EWB. Additionally, the precision of the estimates was substantiated through narrow confidence intervals that did not straddle zero, suggesting robust and stable relationships across the bootstrapped samples. These findings not only confirm the theoretical expectations of institutional theory but also empirically validate the proposed model's effectiveness. Consequently, all four hypotheses (H1–H4) received strong statistical support, emphasizing the relevance of both regulatory environments and information dynamics in shaping ESG disclosure practices in China.

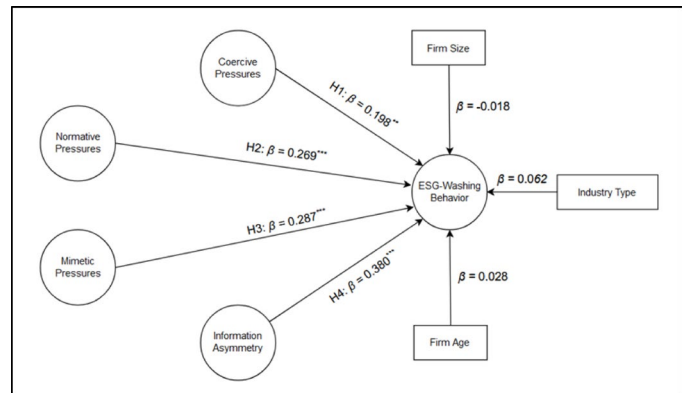
Firm size, firm age, and industry type were incorporated as control variables to rule out alternative explanations;



Table 4 Overview of hypothesis testing results

Relationships among latent variables	UnStd β	Std β	SD	p -value	t-statistic	95% BCa CI	Result
Coercive pressures → ESG-washing behavior	0.201	0.198	0.070	0.002**	2.832**	[0.086; 0.315]	H1 accepted
Normative pressures → ESG-washing behavior	0.211	0.269	0.078	0.000***	3.423***	[0.148; 0.407]	H2 accepted
Mimetic pressures → ESG-washing behavior	0.200	0.287	0.082	0.000***	3.485***	[0.160; 0.434]	H3 accepted
Information asymmetry → ESG-washing behavior	0.345	0.380	0.088	0.000***	4.335***	[0.235; 0.522]	H4 accepted
Firm size → ESG-washing behavior	-0.010	-0.018	0.059	0.378	0.310	[-0.014; 0.078]	–
Firm age → ESG-washing behavior	0.018	0.028	0.050	0.285	0.567	[-0.052; 0.011]	–
Industry type → ESG-washing behavior	0.053	0.062	0.042	0.084	1.478	[-0.052; 0.011]	–

UnStd β denotes the unstandardized beta coefficient, Std β indicates the standardized beta value, SD refers to the standard deviation, BCa represents the bias-corrected and accelerated bootstrap technique. Significance thresholds: ** $|t| \geq 2.33$ ($p < 0.01$); *** $|t| \geq 3.09$ ($p < 0.001$)

Fig. 2 SEM analysis visualizing standardized beta coefficients and p -values among latent variables**Table 5** Robustness checks

Relationships among latent variables	Std β	SD	Sensitivity analysis	RESET	Gaussian copula
Coercive pressures → ESG-washing behavior	0.164	0.052	0.001**	0.164	0.127
Normative pressures → ESG-washing behavior	0.207	0.063	0.000***	0.127	0.166
Mimetic pressures → ESG-washing behavior	0.224	0.045	0.000***	0.093	0.295
Information asymmetry → ESG-washing behavior	0.278	0.049	0.000***	0.086	0.070
Firm size → ESG-washing behavior	-0.017	0.108	0.691	–	–
Firm age → ESG-washing behavior	0.025	0.125	0.588	–	–
Industry type → ESG-washing behavior	0.041	0.086	0.476	–	–

Std β indicates the standardized beta value, SD refers to the standard deviation, RESET refers to the regression equation specification error test. Significance thresholds: ** $|t| \geq 2.33$ ($p < 0.01$); *** $|t| \geq 3.09$ ($p < 0.001$)

however, none exhibited a statistically significant effect on ESG-washing behavior (Fig. 2). In line with the guidelines outlined by Shiao et al. (2024), the main results remained

stable regardless of whether these controls were included, further supporting the consistency of the findings.

Robustness checks

We conducted a sensitivity analysis to ensure that there were no differences between robust and non-robust estimates. As shown in Table 5, the results of the sensitivity analysis are identical to our main findings and lead to the same conclusion as the main analysis. Therefore, we can conclude that our main results are not driven by methodological choices or sample-specific characteristics (Field 2024). Furthermore, we examined potential endogeneity issues to detect possible reverse causality, omitted variables, and sample selection bias using the Gaussian copula approach. As reported in Table 5, the results indicate no evidence of these problems ($p > 0.05$) (Vaithilingam et al. 2024). Finally, we assessed potential model misspecification using the regression equation specification error test (RESET). As shown in Table 5, the test results reveal no evidence of model misspecification ($p > 0.05$), and the model satisfies the assumption of linearity (Wooldridge 2020).

Discussion

This study investigates how coercive, normative, and mimetic institutional pressures, along with information asymmetry, influence ESG-washing behavior among firms



listed on the IDX. The empirical analysis confirms that all three types of institutional pressure play significant roles in shaping corporate ESG-washing strategy. Coercive pressures, driven by government regulations and compliance expectations, tend to push firms toward symbolic ESG disclosures to gain legitimacy while avoiding substantial investment (Can and Turker 2025; Roh et al. 2025; Zhang et al. 2025). Normative pressures, emerging from professional norms and societal expectations, also lead firms to engage in ESG-washing, particularly when stakeholders lack consistent awareness or the mechanisms to verify claims (Chakraborty et al. 2026; Kathan et al. 2025). Mimetic pressures, where firms imitate their industry peers, were found to intensify ESG-washing behavior, indicating that in uncertain or ambiguous ESG environments, firms mimic others' symbolic strategies to avoid competitive disadvantages (Li and Deng 2025; Zhao and Lee 2024).

Moreover, information asymmetry significantly reinforces ESG-washing tendencies by allowing firms to manipulate their disclosures without the immediate risk of detection or punishment. When stakeholders cannot effectively verify or challenge ESG claims due to limited access to data or a lack of ESG literacy, firms gain informational advantages that facilitate opportunistic behavior (Xu et al. 2025). This dynamic also strengthens institutional isomorphism, where firms increasingly conform to symbolic rather than substantive ones. These findings underscore the risk that ESG-washing may become institutionalized, particularly in emerging markets, where regulatory oversight is inconsistent and media or civil society scrutiny remains limited.

The study also reveals heterogeneity in the manifestation of these pressures across broader institutional contexts. In environments characterized by weak enforcement, low civic engagement, and underdeveloped ESG monitoring, such as Indonesia, ESG-washing tends to be more prevalent and less penalized. Firms in our sample, despite their visibility, are not exempt from these patterns; on the contrary, their reputational incentives may drive them to engage in more sophisticated forms of symbolic ESG communication. The findings suggest that without improvements in ESG verification infrastructure, such as third-party auditing or media oversight, institutional and informational forces may continue to incentivize superficial compliance.

Theoretical implications

This study makes important theoretical contributions in two ways. First, drawing on institutional theory, it enriches the literature by empirically validating the influence of coercive, normative, and mimetic pressures on ESG-washing behavior, an area that has been underexplored in prior ESG

disclosure research (Bernini and La Rosa 2024; Delmas and Burbano 2011). While previous studies have often considered institutional forces in isolation or focused broadly on ESG adoption, this study develops and tests a more holistic framework that captures how distinct institutional pressures interact with information asymmetry to shape ESG practice. By incorporating the institutional logics perspective (DiMaggio and Powell 2000; Scott 1995), we offer a more nuanced understanding of how organizational responses to ESG norms vary across contexts. The findings reveal a significant divergence in institutional enforcement and stakeholder scrutiny in developing markets, thereby extending theoretical insights into the contextual conditions under which ESG-washing emerges (Bernini et al. 2024).

Second, this study contributes to the ongoing discourse on organizational legitimacy and symbolic management in emerging economies (Jatmiko et al. 2025; Pratama et al. 2025). Our results support earlier claims that institutional pressures alone are insufficient to ensure meaningful ESG integration, unless reinforced by internal governance and accountability mechanisms (Testa et al. 2018). In weak institutional environments such as Indonesia, firms may adopt ESG discourse primarily as a strategic tool to maintain external legitimacy rather than as a genuine commitment to sustainable practices. This strategic decoupling, commonly expressed as “highlighting more positive aspects than negative ones,” reflects a broader tension between stakeholder expectations and the reality of symbolic compliance.

Managerial implications

This study underscores the need for corporate leaders and stakeholders to recognize the strategic risks associated with ESG-washing, particularly in institutional contexts marked by weak enforcement and limited stakeholder scrutiny. The significant role of coercive, normative, and mimetic pressures in shaping ESG-washing behavior offers valuable insights for executives, board members, and investors. Firms operating in such environments must prioritize the establishment of robust ethical management systems that discourage superficial compliance and symbolic disclosure (Can and Turker 2025; García and Casalegno 2025). Given that ESG-related information is often opaque and difficult for external stakeholders to verify, corporate managers must enhance transparency through improved internal controls and third-party verification and clearer performance-based disclosures. Strengthening corporate governance, enhancing ESG-related risk assessment processes, and building credible audit trails can help firms move from performative to substantive ESG commitments, thereby safeguarding their reputation, securing long-term stakeholder trust, and reducing regulatory backlash (Xu et al. 2025).



Moreover, this study offers several actionable recommendations for policymakers and regulators in emerging markets such as Indonesia. First, accelerating corporate digital transformation can play a pivotal role in curbing ESG-washing by improving traceability, data integrity and reporting accuracy (Sun et al. 2025). Previous studies have shown that digital technologies such as blockchain, AI-driven sustainability tracking, and automated audit systems enhance accountability and reduce the opportunity for ESG-washing (Ren et al. 2025). Therefore, government support in the form of incentives, digital infrastructure, and capacity-building programs should be prioritized to facilitate ESG innovation and compliance in the banking sector. Second, rather than imposing additional regulations, regulators should focus on strengthening enforcement mechanisms and fostering cross-sector collaboration with industry experts, media, and civil society organizations. Encouraging multi-stakeholder engagement can improve external monitoring and pressure firms to align their ESG narratives with their actual performance.

Limitations and directions for future research

While this study offers valuable insights into ESG-washing behavior, it has several limitations must be considered. First, the measurement of ESG-washing was based on managers' perceptions, which, although insightful, may be subject to social desirability bias (SDB). Although we did not detect such a bias in our analysis, we acknowledge the inherent limitations of relying on direct questioning. ESG-washing is a multifaceted phenomenon that can manifest through subtle and complex strategies that are not easily captured by self-reporting methods. Future research should consider triangulating perceptual data with objective metrics such as ESG disclosure ratios or discrepancies between narrative and performance-based indicators. Leveraging secondary data from firm financial reports and archival databases could provide more granular and externally validated insights into the occurrence and severity of ESG-washing practices (Bernini et al. 2024).

Second, this study primarily focused on institutional pressure and information asymmetry as key antecedents of ESG-washing. While these are foundational drivers, ESG-washing is also shaped by a broader array of behavioral, organizational, and environmental factors. Future studies should explore additional variables such as an uncertain regulatory environment, media exposure, executive optimism bias, and cognitive framing of sustainability decisions (Delmas and Burbano 2011). These factors offer a more holistic view of why firms engage in such symbolic compliance. Future research should also consider testing the moderating effect of information asymmetry on the relationship

between institutional pressure and ESG-washing. However, such moderation analyses require careful methodological consideration, as emphasized by Hayes (2022).

Finally, our study was limited by its ability to establish causal relationships. For example, there may be a potential reverse causality between institutional pressure and ESG-washing. Future research should examine this possible bidirectional relationship using an experimental research design that allows for stronger causal inferences and testing of reciprocal effects. Furthermore, the generalizability of our findings to other national and regional contexts may be limited. Comparative cross-country analyses or multilevel investigations could enhance external validity and deepen our understanding of how ESG-washing dynamics unfold across diverse institutional environments.

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Declarations

Conflict of interest The authors declare no conflicts of interest relevant to the content of this article.

References

- Aguinis, H. 2024. *Research methodology: Best practices for rigorous, credible, and impactful research*. SAGE.
- Bandalos, D. L. 2018. *Measurement theory and applications for the social sciences*. Guilford Press.
- Baumgartner H, Weijters B, Pieters R (2021) The biasing effect of common method variance: Some clarifications. *Journal of the Academy of Marketing Science* 49(2):221–235
- Bernini, F., and F. La Rosa. 2024. Research in the greenwashing field: Concepts, theories, and potential impacts on economic and social value. *Journal of Management and Governance* 28(2):405–444.
- Bernini, F., M. Giuliani, and F. La Rosa. 2024. Measuring greenwashing: A systematic methodological literature review. *Business Ethics the Environment & Responsibility* 33(4):649–667.
- Bhuiyan, F., T. Rana, K. Baird, and R. Munir. 2023. Strategic outcome of competitive advantage from corporate sustainability practices: Institutional theory perspective from an emerging economy. *Business Strategy and the Environment* 32(7):4217–4243.
- Biju, Ajithakumari Vijayappan N., S. Geetha, S. Prasad, A. Sasidharan, and A. Jayachandran. 2025. ESG-firm performance nexus: Evidence from an emerging economy. *Business Strategy and the Environment* 34(3):3469–3496.
- Bothello, J., I. Ioannou, V.-A. Porumb, and Y. Zengin-Karaibrahimoglu. 2023. CSR decoupling within business groups and the risk of perceived greenwashing. *Strategic Management Journal* 44(13):3217–3251.
- Bowling, N. A., A. M. Gibson, J. W. Houpt, and C. K. Brower. 2021. Will the questions ever end? Person-level increases in careless responding during questionnaire completion. *Organizational Research Methods* 24(4):718–738.
- Bowling, N. A., J. L. Huang, C. K. Brower, and C. B. Bragg. 2023. The quick and the careless: The construct validity of page time as



- a measure of insufficient effort responding to surveys. *Organizational Research Methods* 26(2):323–352.
- Can, O., and D. Turker. 2025. Institutional pressures and greenwashing in social responsibility: Reversing the link with hybridization capability. *Management Decision* 63(1):187–216.
- Carè, R., P. Agnese, M. Cerciello, and S. Taddeo. 2025. Does it pay off to disclose sustainability information? The effect of ESG disclosure on ESG controversies in European banks. *Business Strategy and the Environment* 34(3):3294–3310.
- Chakraborty D, Bresciani S, Troise C (2026) *International Journal of Bank Marketing* 44(5):849–868
- Chen, H., S. Liu, D. Zhang, and L. Zhang. 2025. Corporate ESG washing and ESG rating divergence: Evidence from China. *Business Strategy and the Environment* 34(7):8390–8428.
- Colwell, S. R., and A. W. Joshi. 2013. Corporate ecological responsiveness: Antecedent effects of institutional pressure and top management commitment and their impact on organizational performance. *Business Strategy and The Environment* 22(2):73–91.
- Contreras, G., Mateos de Cabo, R., and R. Gimeno. 2025. Women who LinkedIn: The gender networking gap among executives. *European Management Journal* 43(3):383–398.
- Cook, R. D., and L. Forzani. 2024. *Partial least squares regression and related dimension reduction methods*. CRC.
- Cornelissen, J. P., R. Durand, P. C. Fiss, J. C. Lammers, and E. Vaara. 2015. Putting communication front and center in institutional theory and analysis. *Academy of Management Review* 40(1):10–27.
- Davis, J., H.-G. Wolff, M. L. Forret, and S. E. Sullivan. 2020. Networking via LinkedIn: An examination of usage and career benefits. *Journal of Vocational Behavior* 118:103396.
- Delmas, M. A., and V. C. Burbano. 2011. The drivers of greenwashing. *California Management Review* 54(1):64–87.
- Deng, B., Z. Peng, K. Albitar, and L. Ji. 2025. Top management team stability and ESG greenwashing: Evidence from China. *Business Strategy and the Environment* 34(1):450–467.
- DiMaggio, P. J., and W. W. Powell. 1983. The iron cage revisited: Institutional Isomorphism in organizational fields. *American Sociological Review* 48(2):147–160.
- DiMaggio, P. J., and W. W. Powell. 2000. The iron cage revisited institutional isomorphism and collective rationality in organizational fields. *Advances in Strategic Management* 17:143–166.
- Eichhorn, J. 2021. *Survey research and sampling*. SAGE.
- Eitrem, A., A. Meidell, and S. Modell. 2024. The use of institutional theory in social and environmental accounting research: A critical review. *Accounting and Business Research* 54(7):775–810.
- Eliwa, Y., A. Aboud, and A. Saleh. 2023. Board gender diversity and ESG decoupling: Does religiosity matter? *Business Strategy and the Environment* 32(7):4046–4067.
- Ferrón-Vilchez, V., J. Valero-Gil, and I. Suárez-Perales. 2021. How does greenwashing influence managers' decision-making? An experimental approach under stakeholder view. *Corporate Social Responsibility and Environmental Management* 28(2):860–880.
- Field, A. 2024. *Discovering statistics using IBM SPSS statistics*. 6th ed. Sage.
- Forliano C, Battisti E, de Bernardi P, Klietstik T (2025) Mapping the greenwashing research landscape: A theoretical and field analysis. *Review of Managerial Science* 19:3407–3456
- Franke, G., and M. Sarstedt. 2019. Heuristics versus statistics in discriminant validity testing: A comparison of four procedures. *Internet Research* 29(3):430–447.
- García, C., and F. Casalegno. 2025. Doing good while doing well? ESG management as an obstacle to impact-oriented sustainable finance in large Spanish banks. *Corporate Social Responsibility and Environmental Management* 32(5):6937–6950.
- Hayes, A. F. 2022. *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. 3rd ed. Guilford Press.
- He, Q., Z. Wang, G. Wang, J. Xie, and Z. Chen. 2022. The dark side of environmental sustainability in projects: Unraveling greenwashing behaviors. *Project Management Journal* 53(4):349–366.
- Heggstad, E. D., D. J. Scheaf, G. C. Banks, Monroe Hausfeld, M. Tonidandel, S., and E. B. Williams. 2019. Scale adaptation in organizational science research: A review and best-practice recommendations. *Journal of Management* 45(6):2596–2627.
- Henseler, J. 2021. *Composite-based structural equation modeling: Analyzing latent and emergent variables*. Guildford.
- Huang, R. 2025. Non-response bias in expectation surveys: Different perceptions and expectations of financial matters from early quitters. *Finance Research Letters* 82:107624.
- Huang, Z., Y. Shi, and M. Jia. 2025. Greenwashing: A systematic literature review. *Accounting & Finance* 65(1):857–882.
- Hünemund, P., and B. Louw. 2025. On the nuisance of control variables in causal regression analysis. *Organizational Research Methods* 28(1):138–151.
- Jatmiko, W., H. Smaoui, and Nur D. Hendranastiti. 2025. Competing institutional logics in corporate ESG: Evidence from developing countries. *Business Strategy and the Environment* 34(5):6184–6209.
- Jugend, D., P. D. C. Fiorini, P.-L. Fournier, H. Latan, C. J. Chiappetta Jabbour, and J. A. A. Scaliza. 2024. Industry 4.0 technologies for the adoption of the circular economy: An analysis of institutional pressures and the effects on firm performance. *Journal of Environmental Management* 370:122260.
- Karch, J. 2020. Improving on adjusted R-squared. *Collabra: Psychology* 6(1):45.
- Kathan, M. C., S. Utz, G. Dorfleitner, J. Eckberg, and L. Chmel. 2025. What you see is not what you get: ESG scores and greenwashing risk. *Finance Research Letters* 74:106710.
- Kwak, D.-H., X. Ma, and S. Kim. 2021. When does social desirability become a problem? Detection and reduction of social desirability bias in information systems research. *Information & Management* 58(7):103500.
- Li, M., and Q. Chen. 2024. Executive pay gap and corporate ESG greenwashing: Evidence from China. *International Review of Financial Analysis* 95:103375.
- Li Y, Deng Z (2025) Can environmental regulation inhibit enterprises' greenwashing? Evidence from implementing the new environment protection law. *Finance Research Letters* 81:107476
- Lindner, T., J. Puck, and A. Verbeke. 2022. Beyond addressing multicollinearity: Robust quantitative analysis and machine learning in international business research. *Journal of International Business Studies* 53(7):1307–1314.
- Liu, M., J. Lu, Q. Liu, H. Wang, Y. Yang, and S. Fang. 2025. The impact of executive cognitive characteristics on a firm's ESG performance: An institutional theory perspective. *Journal of Management and Governance* 29(1):145–173.
- Lopes de Sousa Jabbour, A. B., Chiappetta Jabbour, C. J. Choi, T.-M., and H. Latan. 2022. Better together': Evidence on the joint adoption of circular economy and industry 4.0 technologies. *International Journal of Production Economics* 252:108581.
- Long, L., C. Wang, and M. Zhang. 2025. Does social media pressure induce corporate hypocrisy? Evidence of ESG greenwashing from China. *Journal of Business Ethics* 197(2):311–338.
- Luhglatno, L., G. T. Solovida, A. B. Lopes de Sousa Jabbour, Chiappetta Jabbour, C. J. Latan, H., and D. K. Adhi. 2026. Greenwashing and firm performance in an emerging market: Short-term gains vs long-term risks. *Journal of Cleaner Production* 557:148235.
- Ma, Y., G.-F. Feng, Z.-j. Yin, and C.-P. Chang. 2025. ESG disclosures, green innovation, and greenwashing: All for sustainable development? *Sustainable Development* 33(2):1797–1815.
- Mao, Z., S. Wang, and Y.-E. Lin. 2024. ESG, ESG rating divergence and earnings management: Evidence from China.



- Corporate Social Responsibility and Environmental Management* 31(4):3328–3347.
- Metelytsia, V., V. Valentinov, and T. Gagalyuk. 2025. Attitudes toward ESG reporting in a crisis economy: Insights from interviews with Ukrainian agricultural enterprises. *Business Strategy & Development* 8(2):e70123.
- Murphy, K. R. 2021. In praise of Table 1: The importance of making better use of descriptive statistics. *Industrial and Organizational Psychology* 14(4):461–477.
- Niu, Z., Z. Yunfu, W. Yuting, and M. Zhong. 2025. CEO turnover and ESG greenwashing: Evidence from China. *Applied Economics Letters* 32(19):2778–2782.
- Nunnally, J. C., and I. H. Bernstein. 1994. *Psychometric theory*. 3rd ed. McGraw-Hill.
- Oscarsson, H., and S. Arkhede. 2020. Effects of conditional incentives on response rate, non-response bias and measurement error in a high response-rate context. *International Journal of Public Opinion Research* 32(2):354–368.
- Podsakoff, P. M., N. P. Podsakoff, L. J. Williams, C. Huang, and J. Yang. 2024. Common method bias: It's bad, it's complex, it's widespread, and it's not easy to fix. *Annual Review of Organizational Psychology and Organizational Behavior* 11:17–61.
- Pratama, A., H. Yusoff, W. Yadiati, and E. Jaenudin. 2025. Sustainability-related corporate governance and greenwashing practices: preliminary evidence from southeast Asian companies. *Meditari Accountancy Research* 33(3):853–885.
- Ren, J., P. Wu, and L. Hou. 2024. Social media attention and corporate greenwashing: Evidence from China. *Corporate Social Responsibility and Environmental Management* 31(6):5446–5465.
- Ren, X., S. Hu, X. Sun, and D. Zhou. 2025. The impact of artificial intelligence on corporate greenwashing: Evidence from the Chinese listed firms. *Journal of Accounting Literature*. <https://doi.org/10.1108/JAL-07-2024-0174>
- Ried, L., S. Eckerd, and L. Kaufmann. 2022. Social desirability bias in PSM surveys and behavioral experiments: Considerations for design development and data collection. *Journal of Purchasing and Supply Management* 28(1):100743.
- Roh, T., S. Xiao, B. I. Park, and P. N. Ghauri. 2025. Stakeholder pressure, democracy levels, and multinational enterprise corporate social responsibility: Stakeholder and institutional theories. *Journal of Business Research* 200:115619.
- Rönkkö, M., and E. Cho. 2022. An updated guideline for assessing discriminant validity. *Organizational Research Methods* 25(1):6–14.
- Roos, J. M., and S. Bauldry. 2022. *Confirmatory factor analysis*. SAGE.
- Roulin, N., and J. Levashina. 2019. LinkedIn as a new selection method: Psychometric properties and assessment approach. *Personnel Psychology* 72(2):187–211.
- Ruggeri, M., G. Vinci, R. Ruggieri, and M. Savastano. 2025. Facing the risk of greenwashing in the ESG report of global companies: The importance of life cycle thinking. *Corporate Social Responsibility and Environmental Management* 32(3):4216–4234.
- Saxena, M., T. Bagga, S. Gupta, and N. Kaushik. 2024. Exploring common method variance in analytics research in the Indian Context: A comparative study with known techniques. *FIIB Business Review* 13(5):553–569.
- Scaliza, J. A. A., D. Jugend, C. J. Chiappetta Jabbour, H. Latan, F. Armellini, D. Twigg, and D. F. Andrade. 2022. Relationships among organizational culture, open innovation, innovative ecosystems, and performance of firms: Evidence from an emerging economy context. *Journal of Business Research* 140:264–279.
- Schindler, P. S. 2022. *Business research methods*. 14th ed. McGraw Hill.
- Shiau, W.-L., P. Y. K. Chau, J. B. Thatcher, C.-I. Teng, and Y. K. Dwivedi. 2024. Have we controlled properly? Problems with and recommendations for the use of control variables in information systems research. *International Journal of Information Management* 74:102702.
- Scott, W. R. 1995. *Institutions and organizations*. SAGE.
- Streukens, S., and S. Leroi-Werelds. 2016. Bootstrapping and PLS-SEM: A step-by-step guide to get more out of your bootstrap results. *European Management Journal* 34(6):618–632.
- Sun, Z., X. Sun, W. Wang, and W. Wang. 2025. Digital transformation and greenwashing in environmental, social, and governance disclosure: Does investor attention matter? *Business Ethics the Environment & Responsibility* 34(1):81–102.
- Testa, F., O. Boiral, and F. Iraldo. 2018. Internalization of environmental practices and institutional complexity: Can stakeholders pressures encourage greenwashing? *Journal of Business Ethics* 147(2):287–307.
- Todaro, D. L., and R. Torelli. 2024. From greenwashing to ESG-washing: A focus on the circular economy field. *Corporate Social Responsibility and Environmental Management* 31(5):4034–4046.
- Vaithilingam, S., C. S. Ong, O. I. Moisesescu, and M. S. Nair. 2024. Robustness checks in PLS-SEM: A review of recent practices and recommendations for future applications in business research. *Journal of Business Research* 173:114465.
- Venturelli, V., A. Pedrazzoli, D. Pennetta, and G. De Novellis. 2025. Assessing the influence of ESG washing on bank reputational exposure: A cross-country analysis. *Business Ethics the Environment & Responsibility* 34:1540–1560.
- Wang, Y., Z. Niu, W. Zhong, and M. Zhong. 2025. ESG carbonwashing: A new type of ESG-washing. *Sustainability*, 17(13).
- Wooldridge, J. M. 2020. *Introductory econometrics: A modern approach*. 7th ed. Cengage Learning.
- Wu, Z., S. Long, and Y. Wang. 2025. ESG greenwashing and organizational resilience: Exploring sustainable development paths from the perspective of unsystematic risk. *Journal of Environmental Management* 390:126395.
- Xu, X., Z. Li, and F. Liu. 2025. Greenwashing in ESG information disclosure: An intertemporal signaling game approach. *International Journal of Production Economics* 287:109674.
- Zhang, Z., X. Zheng, Q. Lv, and X. Meng. 2025. How institutional pressures influence corporate greenwashing strategies: Moderating effects of campaign-style environmental enforcement. *Journal of Environmental Management* 373:123914.
- Zhao, Y.-N., and C.-C. Lee. 2024. The impact of vertical environmental regulation mechanism on greenwashing. *Journal of Cleaner Production* 475:143637.
- Zhou, Y., and L. Chen. 2024. Public attention and Environmental Disclosure Greenwashing: pressure from oversight or incentive from legitimacy. *China Finance Review International*. <https://doi.org/10.1108/CFRI-02-2024-0079>
- Zioło, M., I. Bąk, and A. Spoz. 2024. Literature review of greenwashing research: State of the art. *Corporate Social Responsibility and Environmental Management* 31(6):5343–5356.

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