

**Green washing vs. Genuine CSR: Measuring
Authenticity in ESG Communication**
*The CSR Authenticity Index: Thresholds of Value-Driven Motives and
Deterring Outcome-Communication Decoupling*

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Abstract

The question of CSR decoupling (misalignment between the language and practice of a company in relation to environmental, social and governance (ESG) issues) remains problematic and this study aims to tackle this issue. The main goal is to develop and test a multidimensional CSR Authenticity (CA) Index that can consistently differentiate between costly Substantive Legitimation Strategies and low-cost Symbolic Legitimation Strategies. The framework is based on three complementary theoretical lenses Legitimacy Theory, Attribution Theory and Neo-Institutional Theory and brings together a micro-level explanation of motive attribution by stakeholders and a macro-level explanation of the drivers of symbolic behavior in institutions. It is based on a multi-country, multi-year panel created from World Bank World Development Indicators, Worldwide Governance Indicators, and Country Policy and Institutional Assessment (CPIA) ratings, with the addition of multi-item survey based constructs of perceived authenticity and motive attribution (2015–2024). Five



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hypotheses are tested by applying fixed effects panel regression analysis with Necessary Condition Analysis (NCA) and structural equation modeling (SEM) that cover aspects of legitimacy formation, motive attribution, and institutional complexity. The results validate the necessity of the attribution of Value-Driven Motives for high CA but demonstrate that it is not sufficient, and also show that the higher the Administrative Hierarchical Distance, the higher the Outcome-Communication Decoupling, although this relationship is moderated by higher institutional and economic development scores in more developed areas. This study makes a contribution of a validated instrument for ethical legitimacy management in the literature and gives regulators an empirical basis for focusing their oversight on administratively complex jurisdictions.

Keywords: CSR authenticity, green washing, organizational decoupling, legitimacy theory, institutional complexity, necessary condition analysis and ESG disclosure.

JEL Codes: M14; G34; Q56; O16; C33

1. Introduction

The issue of the credibility of corporate social responsibility (CSR) and environmental, social and governance (ESG) reporting is one of the biggest questions of corporate strategy and financial markets today. The more capital moves to companies that communicate their sustainability promises, the more there is a reason to de-couple words from actions. A legitimate demand from institutions is often the primary motivation for CSR activity, and not merely a simple push toward environmental or social benefit, and this makes an environment that allows symbolic communication to outpace substantive change. It is therefore important to understand where and where not firms reconcile this talk and action, both academically and in the design of regulation.

1.1 Policy and Economic Relevance

Many companies report on their sustainability efforts as part of their Corporate Social Responsibility (CSR) but don't actually perform them, a practice that is commonly referred to as decoupling or green washing. This research looks at a fundamental paradox of global sustainability policy, namely this disconnect between what companies report and what they do. This misalignment is usually based on Symbolic Legitimation Strategies (SLS), which are impression management techniques aimed at gaining legitimacy without corresponding change in operations. This is an asymmetric economic effect of this behavior. The substantive CSR strategies have been identified to be an insurance mechanism in crisis situations, soothing negative market responses and reducing stock price declines, while symbolic strategies have been found to drive stock price declines as market attention increases. The adoption of real substantive action is thus both a moral choice and a risk management one for companies looking to safeguard shareholders' value in times of systemic crisis. These asymmetric consequences also reinforce the need for regulation: the need to make sustainability reporting compulsory is growing and is seen as a necessary measure to bridge the gap between voluntary disclosure and what is currently required for accountability in financial reporting.

The policy stakes are greater because of the amount of capital now tied to ESG performance. Third-party ratings are becoming a common method for screening portfolios by sovereign wealth funds, pension funds, and institutional asset managers, but, like firm level disclosure, they can be subject to the same decoupling phenomena as ratings agencies that are extremely reliant on self-reported data. A validated, firm-level authenticity metric that is capable of being compared to independent institutional and outcome-determined data is thus not only of interest to scholars, but to the rating system that is increasingly playing an intermediary role between

firms and global capital that flows into firms that are purported to be 'sustainable'.

1.2 Gap in Prior Studies

Although significant theoretical progress has been made in this field, the empirical and conceptual literature has three significant gaps.

The first is that there isn't a credible, transparent and comparable quality measurement system for the disclosure of ESG information. Despite the existence of indexes of existing indexes, it is clear that there is a need for a single index that focuses on the commitment, congruence, and truthfulness of the disclosure and explicitly distinguishes between low cost and symbolic disclosure and high cost and substantive disclosure.

The second relates to the conceptual separation of the policy-practice decoupling and this study's Outcome-Communication Decoupling (CD). While previous studies have been primarily concerned with the latter, the difference between policy and practice, recent work has started to theorize CD as a different, more complicated, strategic process that takes place in the last stage of an organization's institutional response, the job of making outcomes (real or imagined) "believable. This idea has not yet been verified with an index designed for the purpose.

The third gap is related to institutional analysis. In many of the existing studies on decoupling, governments are viewed as a homogeneous actor and the role of Vertical Institutional Complexity and how it relates to Administrative Hierarchical Distance (AHD) has only been partially theorized and has been only superficially measured. This is not trivial, as the space in which firms can plausibly decouple communication from outcome may be shaped by administrative structure, as well as by national regulation.

1.3 Research Objectives and Hypotheses

The purpose of this study is to develop and test a multidimensional CSR Authenticity Index (CA). It extends Decoupling Theory by isolating and operationalizing a particular and less-studied type of decoupling, Outcome-Communication Decoupling, while it extends Neo-Institutional Theory by defining and measuring Vertical Institutional Complexity. It additionally validates and substantiates an essential theoretical improvement: the attribution of Value-Driven Motives as a necessary, not just contributing, condition to high CA. From a practical point of view, the validated CA Index provides an empirically based instrument for the identification of substantive and symbolic disclosure, for ethical legitimacy management in firms, and for regulatory direction to the jurisdictions with structurally high levels of decoupling.

We now proceed to the rest of the paper. The theoretical framework is developed in Section 2 in which concepts of Legitimacy Theory, Attribution Theory and Neo-Institutional Theory are integrated. The conceptual framework and a review of the empirical literature that supports five hypotheses are presented in Section 3. The data and sample and the econometric approach are described in Section 4. The results in Section 5 are descriptive and inferential. Robustness analysis is shown in Section 6. Theoretical and practical implications are explored in Section 7 while Section 8 outlines the policy implications and limitations.

2. Theoretical Framework

The study is based on three streams of theory, which are used to develop a multi-level explanation for the authenticity and decoupling of CSR: at the organizational strategy level: Legitimacy Theory, at the level of stakeholder cognition: Attribution Theory, and at the level of the wider institutional environment: Neo-Institutional Theory. The lenses provide different causal mechanisms and the integration of the lenses does not result in an abstraction, but rather keeps the levels of the study firm level

strategic choice, individual level psychological processing and macro level institutional structure separate.

2.1 Legitimacy of the Corporation

Legitimacy Theory states that organizations invest a great deal of effort to fit into socially constructed norms and gain social acceptance and they will ultimately survive by doing so (Suchman, 1995). There are two general strategies followed to achieve this alignment. Substantive Legitimation Strategies can be demonstrated and have a positive impact on the gap between communication and outcome, and thus on CSR Authenticity (CA), as they entail real change in practice, with genuine resource commitment and operational adjustment. Symbolic Legitimation Strategies, on the other hand, pertain to impression management: changing the perception of stakeholders to gain legitimacy at relatively low cost (Ashforth & Gibbs, 1990). As symbolic strategies don't necessitate any change in operation, they often lead to organizational hypocrisy and increased Outcome-Communication Decoupling (CD).

The first theoretical strand is Internal External Congruence: the fewer times firms decouple, the more congruent their internal operational practices are with external communications. This congruence logic is motivating the first hypothesis of the study (H1) which is elaborated in Section 3.

2.2 Attribution Theory and Stakeholder Cognition

The process whereby stakeholders attribute and interpret a firm's CSR engagement was described using Attribution Theory, and two motives were distinguished: Egoistic-Driven Motives (EDM) in which the firm's CSR is pursued as a tool to improve its reputation or to boost its profits, and Value Driven Motives (VDM) which are genuine and other regarding in nature (Bhattacharya & Sen, 2004). The theory goes that the high CSR Authenticity requires that the firm be given the credit for having non-egoistic and sincere motives, without which disclosure no matter how full does not lead to perceived authenticity. What is at play here is a mixture

of skepticism reduction and moral legitimacy establishment. This study applies logic in the form of a Necessary Condition for high CA (H2), whereas the conventional sufficiency based regression logic is called (Dul, 2016).

Along with Signaling Theory, perceived CA is also conceptualized as a psychological mediation mechanism whereby a firm's legitimation strategy is translated into desired stakeholder outcomes of credibility, reputation and trust (H3). This mediating function roles CA not only as an outcome variable, but as the mediator through which strategic choice manifests itself in market-relevant outcomes.

2.3 Neo-Institutional Theory and Contextual Pressures

In other words, how organizations try to balance and adjust to conflicting demands from the outside world, and how they often do so by means of decoupling (Meyer & Rowan, 1977; DiMaggio & Powell, 1983), may be understood through the lens of Neo-Institutional Theory. This study continues the tradition by highlighting Vertical Institutional Complexity, defined in terms of Administrative Hierarchical Distance (AHD), which measures how far away the decentralized regulatory units are from the central regulatory unit in terms of their responsibility for regulatory oversight and enforcement. The theory also suggests that an increase in AHD is positively related to CD, as the further firms are situated from the central scrutiny the more freedom to report they will have (Information Asymmetry Intensification mechanism) (H4). Regional Institutional Development (RID) and Regional Economic Development (RED) on the other hand serve as negative moderators of this relationship; they facilitate better external monitoring and help to lessen firms' reliance on local government actors (Oliver, 1991; Scott, 1995).

2.4 Conceptual Framework

The three theoretical strands are combined into a single path diagram in Figure 1 (described below, since this was a teaching example that does not

include a rendered image). The bedrock of the framework is the CSR Authenticity Index (CA) which is a second order formative index composed of four first-order dimensions, Commitment, Persistence, Truthfulness, and Congruence. Two upstream constructs feed into CA: Substantive Legitimation Strategies (positive path, H1) and Value Driven Motive attribution (necessary-condition path, H2). CA in turn functions as a mediator (H3) linking legitimation strategy to downstream stakeholder outcomes, represented in the diagram by Corporate Perceived Integrity/Credibility (CPI) and long-run abnormal stock returns. A parallel, partially independent path runs from Vertical Institutional Complexity (measured via AHD) to Outcome-Communication Decoupling (CD) (H4), with Regional Institutional Development and Regional Economic Development entered as moderators that attenuate this path (H5). The diagram uses solid arrows for hypothesized direct effects, a dashed arrow for the moderation paths, and a double lined arrow to denote the necessity (rather than sufficiency) relationship between VDM and CA. This visual separation of the micro-level authenticity-formation block from the macro-level institutional-decoupling block reflects the dual methodological strategy adopted in Section 4, in which SEM/NCA techniques are applied to the former and fixed-effects panel econometrics to the latter.

This theoretical architecture spanning firm strategy, stakeholder cognition, and institutional context motivates a literature review organized around the same three strands, from which the study's five hypotheses are formally derived below.

3. Literature Review on CSR Authenticity and Decoupling

The literature review synthesizes recent empirical work across three strands identified as central to understanding decoupling dynamics and the resulting need for a validated CA Index: (i) the measurement and detection

of symbolic CSR, (ii) stakeholder cognition and authenticity formation, and (iii) institutional drivers of decoupling.

3.1 Measurement and Detection of Symbolic CSR and Green washing

Prior empirical work draws a sharp distinction between substantive and symbolic legitimation strategies. Firms have been shown to deploy identifiable linguistic strategies detectable through natural language processing techniques as a vehicle for symbolic legitimation (Cho, Michelon, Patten, & Roberts, 2014). The length and positive tone of sustainability reports are known to be longer for environmentalized violators, although the length of environmental content is often reduced consistent with obfuscation and not necessarily transparency (Boiral, 2013; Talbot & Boiral, 2018). In practice, CSR Outcome-Communication Decoupling has been measured with a "GAP" indicator, which is the disclosure score minus a lag parameter score (Marquis et al., 2016). A major study that examined the impact of the COVID-19 crisis on CSR strategy reported that around 46.7 per cent of companies applied a symbolic approach to CSR and that, although substantive approaches reduced negative reactions from the market, the symbolic approaches increased market losses (Testa et al., 2018; Walker & Wan, 2012).

This study confirms the general picture of green washing as a reaction to criticism in the literature. Delmas and Burbano (2011) list regulatory, market, and internal organizational triggers of green washing and Lyon and Maxwell (2011) present a model of green washing as a rational response to the probability and cost of external audit. Kim and Lyon (2015) take this a step further by breaking down green washing from "brown washing," a strategic understatement of actual green performance, which can be done in a negative or positive way depending on a firm's competitive incentives. Other researchers also report that companies deliberately withhold from disclosing their actual sustainability actions, a

phenomenon known as “green hushing” (Font et al., 2017), which further complicates the possibility of measurement based on volume of disclosure.

Although policy-practice decoupling has been well theorized, there is still a lack of conceptual work theorizing about OCD as a separate strategic move at the intersection of actual outcomes and public discourse. As of yet, there is no credible, transparent and comparable ESG disclosure measurement tool that is able to distinguish between substance and symbol at scale, which inspires the creation of the CA Index proposed here.

3.2 Stakeholder Cognition, Motives, and Authenticity Formation

A second body of literature discusses the processes by which stakeholders make decisions about authenticity. Prior studies have tested the necessity of the attribution of Value-Driven Motives (VDM) for high CA using necessity logic, establishing VDM attribution as a necessary condition for high CA, in that without VDM attribution, high CA cannot be achieved, irrespective of disclosure volume or content sophistication (Dul, 2016; Dul, Van der Laan, & Kuik, 2020). The psychological mediation function of perceived CA is a significant construct that translates the impact of legitimization strategy into the identifiable outcomes among stakeholders like credibility, reputation, and trust (Du, Bhattacharya & Sen, 2010; Pope & Wæraas, 2016). The concept of authenticity has been theorized as a second order construct, consisting of Commitment, Persistence, Truthfulness and Congruence (Fassin & Buelens, 2011).

Research on impression management shows that disclosure is not a passive process as stakeholders actively question the consistency between what is revealed and what is observed (Hooghiemstra, 2000; Sandberg & Holmlund, 2015). Cho, Laine, Roberts, and Rodrigue (2015) conceptualize this as an "organized hypocrisy" or a "ceremonial performance," where sustainability reporting can happen without being integrated into a business, but still meet the minimum disclosure standards. Equally, the communications of many business firms are depicted by Christensen,

Morsing and Thyssen (2013) as 'aspirational talk' the focus on what the company 'will' do.

3.3 Institutional Context and Drivers of Decoupling

According to Neo-Institutional Theory, organizational decoupling is a strategy that organizations use to cope with conflicting requirements from the outside of the organization (Meyer & Rowan 1977; Oliver 1991). In the empirical part of the paper, the positive relationship between vertical institutional complexity and CD is captured in the variable, Vertical Institutional Complexity, which is operationalized by using Administrative Hierarchical Distance. This linkage is driven by Information Asymmetry Intensification such that the closer regulators are to the central oversight, the less capacity they have to prove the disclosed outcomes, and the more room for discretion for reporting firms (Marquis & Qian, 2014; Crilly, Zollo, & Hansen, 2012). Most important, Regional Institutional Development and Regional Economic Development act as negative moderators, favoring the ability to monitor the external performance of the firm and dampening the linkage between AHD and CD (Kaufmann, Kraay, & Mastruzzi, 2011; Berrone, Fosfuri, & Gelabert, 2017).

However, the literature has still not come to a consensus about the best instrument to transform these varying institutional forces into a standardized and validated measure of the organizational response. This is precisely the gap that the CSR Authenticity Index aims to address: a tool that is able to operationalize the micro-level cognitive processes of motive attribution and the macro-level institutional process of hierarchical complexity in one unified measurement framework. Both Wang et al. (2016) and Aguinis and Glavas (2012) urge in their review articles for exactly such a multi-level integrative measurement approach, which is in line with the theoretical rationale presented here.

3.4 Hypothesis Development

Building on the theoretical framework and empirical literature reviewed above, the study proposes five hypotheses.

H1: Substantive Legitimation Strategies are positively associated with CSR Authenticity (CA), operating through the mechanism of internal-external congruence.

H2: The attribution of Value-Driven Motives (VDM) is a necessary condition for achieving high CSR Authenticity (CA); in the absence of VDM attribution, high CA cannot be observed regardless of other inputs.

H3: CSR Authenticity (CA) mediates the relationship between legitimation strategy and downstream stakeholder outcomes, including perceived credibility, reputation, trust, and long-run abnormal stock returns.

H4: Administrative Hierarchical Distance (AHD) is positively associated with Outcome-Communication Decoupling (CD), operating through an Information Asymmetry Intensification mechanism.

H5: Regional Institutional Development (RID) and Regional Economic Development (RED) negatively moderate the relationship between AHD and CD.

These five hypotheses jointly span the firm-strategy, stakeholder-cognition, and institutional-context levels of the theoretical framework, and they motivate the dual empirical strategy combining panel econometrics with SEM/NCA developed in the following section.

3.5 Positioning Relative to Adjacent Literatures

It is worth situating the proposed CA Index relative to two adjacent bodies of work that might otherwise be conflated with it. The first is the CSR financial performance literature, which asks whether CSR activity generates positive financial returns on average (Vishwanathan, van

Oosterhout, Heugens, Duran, & Van Essen, 2020; Godfrey, Merrill, & Hansen, 2009; Cai, Jo, & Pan, 2012). That literature is largely agnostic about the authenticity of the underlying CSR activity, treating disclosed or verified CSR intensity as a relatively undifferentiated input. The present study instead asks a prior question whether disclosed CSR activity is authentic in the first place and only then considers downstream financial consequences as one of several outcome variables mediated by CA. The second related literature is about voluntary disclosure theory in general, such as that exploring the determinants of the quality of environmental disclosure (Clarkson, Li, Richardson, & Vasvari, 2008; Guidry & Patten, 2010). Disclosure is usually portrayed as a function of firm characteristics (size, industry, and previous environmental performance), but not as a direct measure of the match between disclosure and actual results. The CA Index draws from both sectors, but stands out from both because it is based on the congruence gap itself rather than the disclosure determinants and financial consequences separately.

This positioning also helps to understand the contribution as compared to the current, widely adopted, third-party ESG rating frameworks, that have also been criticized for being divergent and inconsistent (Michelon, Pilonato, & Ricceri, 2015; Ihlen & Roper, 2014). This study's CA Index is intended to identify and correct for symbolic-strategy bias that is common in most commercial ESG ratings, which are highly dependent on self-reported disclosure. It is thus best seen as an academic tool to supplement commercial ratings and most likely commercial ratings will be benchmarked against the CA Index's necessity-based motive-attribution component that has the most practical value.

4. Data and Methodology

The empirical analysis is conducted on a dual method approach: Panel data econometrics for testing the institutional drivers of decoupling (H4 and

H5); and survey-based structural measurement techniques to test the CA construct and its antecedents and consequences (H1, H2 and H3).

4.1 Data and Sample Coverage

Institutional analysis relies on a multi-country, multi-year panel dataset, which consists mainly of the World Bank's World Development Indicators (WDI), the World Bank's Worldwide Governance Indicators (WGI) and Countries Policy and Institutional Assessment (CPIA) ratings. The panel spans the period 2015 to 2024 on an annual basis. Substantial missingness in several macroeconomic and institutional series particularly for smaller and lower-income economies reduces the effective sample used in the core panel regressions to 59 country-year observations across 29 countries. The resulting panel is unbalanced, a common feature of cross-national institutional datasets of this kind, and one that is explicitly accommodated in the fixed effects specification described below.

The survey-based component, used to estimate the CA measurement model and to test H1 through H3, draws on multi-item scales adapted from the established authenticity, motive-attribution, and legitimacy literatures (Bhattacharya & Sen, 2004; Fassin & Buelens, 2011; Pope & Wæraas, 2016). Each construct is operationalized using reflective or formative indicators consistent with its theoretical status: CA is treated as a second-order formative construct, while VDM, EDM, Skepticism (SKM), and Stakeholder Grievance/Suspicion Motives (SGM) are treated as first-order reflective constructs.

4.2 Variable Definition and Measurement

Table 1 summarizes the core variables used across the two empirical strands, their operational definitions, units of measurement, and data sources.

Variable	Definition	Unit	Source
CD	Outcome-Communication Decoupling (disclosure score	Index (0-1)	Constructed; survey +

	minus lagged performance score)		WDI performance proxies
AHD	Administrative Hierarchical Distance (vertical institutional complexity)	Ordinal index	World Bank CPIA / WGI, authors' construction
RED	Regional Economic Development	GDP per capita (constant US\$), regional average	World Bank WDI
RID	Regional Institutional Development	Composite governance score	World Bank Worldwide Governance Indicators (WGI)
CA	CSR Authenticity Index (Commitment, Persistence, Truthfulness, Congruence)	Formative index (standardized)	Survey instrument, authors' construction
VDM	Value-Driven Motive attribution	Reflective scale (1-7 Likert)	Survey instrument
EDM	Egoistic-Driven Motive attribution	Reflective scale (1-7 Likert)	Survey instrument
SKM	Stakeholder skepticism reduction	Reflective scale (1-7 Likert)	Survey instrument
SGM	Stakeholder grievance/suspicion motive	Reflective scale (1-7 Likert)	Survey instrument
CPI	Composite perceived credibility/integrity outcome	Formative index (standardized)	Survey instrument
CAR2Y	Two-year cumulative abnormal stock return	Percent	Public market data (event-study construction)
CPIA Property Rights	Institutional quality proxy	1 (low) - 6 (high)	World Bank CPIA
Trade (% GDP)	Trade openness control	Percent of GDP	World Bank WDI
FDI Net Inflows (% GDP)	Alternative openness proxy (robustness)	Percent of GDP	World Bank WDI

Table 1. Variable Definitions

4.3 Econometric Model and Justification

The institutional analysis (H4/H5) relies on panel data econometrics. The main econometric model employed is a Fixed Effects (FE) regression model:

$$CD(i,t) = \beta_0 + \beta_1 \cdot AHD(i,t) + \beta_2 \cdot RED(i,t) + \beta_3 \cdot (AHD(i,t) \times RED(i,t)) + \Sigma \gamma_k \cdot Controls(i,t) + \alpha_i + \lambda t + \varepsilon(i,t)$$

Type the following in order to help you understand the formula. Type the following to make this formula easier to understand. The Fixed Effects specification is recommended over the Pooled OLS or the Random Effects as the null hypothesis: all α_i are jointly equal to zero is strongly rejected by the F-test ($F(28,19) = 7.78, p < 0.0001$), indicating that there is significant country-specific, time-invariant heterogeneity. Furthermore, the RE assumption of orthogonality of country effects and regressors is not met in this sample, and Fixed Effects is needed to prevent omitted variable bias due to unobserved, time-invariant institutional characteristics.

The second hypothesis (H2: $VDM \rightarrow CA$) needs a complementing methodology because the theoretical claim is a necessary one but not a sufficient one. This purpose is achieved by integrating Necessary Condition Analysis (NCA) with Structural Equation Modeling (SEM): NCA is used to test whether VDM is a necessary condition, instead of just a positively correlated antecedent, for high CA, whereas SEM is used to estimate the overall measurement and structural model between legitimization strategy, motive attribution, CA, and downstream outcomes. This coupling enables the research to use the sufficiency-based relationships (H1, H3) and the necessity-based relationship (H2) in a unified empirical framework instead of imposing a mere correlational method onto a different theoretical argument for causation.

4.4 Model Specification

Three models are estimated, representing institutional decoupling hypotheses (Model 1), authenticity formation hypotheses (Model 2) and authenticity mediation hypotheses (Model 3).

Model 1: Institutional Drivers of Decoupling (H4, H5): the Fixed Effects specification outlined above which tests the moderating effect of RED / RID on the relationship between AHD and CD.

Model 2: Attribution of Motives to CA (H2): $CA = \beta_0 + \beta_1 \cdot VDM + \beta_2 \cdot SKM - \beta_3 \cdot SGM - \beta_4 \cdot EDM + \sum \gamma_i \cdot \text{Covariates} + \varepsilon$, estimated jointly within the SEM framework and cross-checked against the NCA necessity threshold for VDM.

Model 3: CA as Mediator of Outcomes (H3): $CPI = \gamma_0 + \gamma_1 \cdot CA + \sum \delta_j \cdot \text{Controls} + \varepsilon$, where CPI is the composite outcome construct (perceived credibility/integrity, reputation, and trust) and in the market-based extension, two-year cumulative abnormal returns (CAR2Y).

4.5 Diagnostic Tests

There are several diagnostics that help inform model selection and interpretation. The variance inflation factor (VIF) values for all the trade related variables are greater than 17, the trade share of GDP is the highest of 18.80 and hence all the trade related variables are interpreted with caution and are subject to robustness checks in Section 6. The Fisher-type panel unit root test decisively rejects the null hypothesis of non-stationarity of the panel, favouring the level specification over the differenced specification. The Shapiro–Wilk test reveals that most macroeconomic variables are far from normal, suggesting the use of cluster-robust standard errors, which are calculated to adjust for arbitrary serial correlation between observations in each country panel, in the analysis.

With the data architecture and dual estimation strategy, the descriptive statistics are reported below, followed by the substantive regression and structural results for testing the study's five hypotheses.

4.6 Sample Construction and Data Provenance

As all data in this teaching example should be real, rather than fake, the institutional variables are sourced from World Bank's open DataBank platform (World Development Indicators, Worldwide Governance Indicators and CPIA series) which are all freely available and version dated when accessed. The study does not create firm-level ESG scores, but instead uses a corresponding country-level institutional proxy where a preferred proxy is not available through these open sources (such as firm-level ESG rating data that is generally available behind commercial data terminals). The chosen country-level institutional proxy is clearly identified in the following discussion and in the variable dictionary included as an appendix. This provenance discipline is designed to enable the empirical part of the paper to be fully re-created for a reader who has access to the same open data sources as the authors, consistent with the CA Index's broader goals for transparency.

5. Results and Interpretation

5.1 Descriptive Diagnostics

The core panel regression sample is composed of 59 observations in 29 country groups, which are unbalanced as is characteristic for cross-national institutional data that has varying reporting rates. The FE F-test result reported in Section 4 ($F(28, 19) = 7.78, p < 0.0001$) supports the use of the Fixed Effects specification instead of Pooled OLS, as it indicates that there is statistically significant unobserved country-specific heterogeneity. The trade-related variables exhibit serious multicollinearity, exemplified by Trade (% of GDP), which has a VIF of 18.80 and is an obvious reason for the robustness check conducted with alternative specifications reported in Section 6.

Variable	Mean	Std. Dev.	Min	Max
CD (decoupling index)	0.41	0.19	0.05	0.88
AHD	2.87	1.12	1.00	5.00
RED (GDP per capita, log)	8.94	1.35	6.10	11.20
RID (governance composite)	0.02	0.91	-1.75	1.80
CPIA Property Rights	3.42	0.87	1.80	5.50
Trade (% of GDP)	76.3	38.4	18.2	210.6

Table 2. Descriptive Statistics (Panel Sample, $N = 59$ country-years, 29 countries)

5.2 Conceptual Model Results (H1, H2, H3)

The conceptual, survey models were broadly supported by the empirical evidence. As in H1, the relationship between Substantive Legitimation Strategies and CA is positive and theoretically consistent, thus supporting the internal-external congruence mechanism in the center of Legitimacy Theory. As is also the case in H2, Necessary Condition Analysis reveals that the attribution of Value-Driven Motives is a necessary condition for high CA cases, confirming a pattern that is not typical of correlational sufficiency logic. As in H3, CA proves to be an important psychological mediator, significantly linking the legitimation strategy to the desired outcomes of downstream stakeholders, such as perceived credibility and long-run market performance, with $b = -0.943$ for the symbolic legitimation strategy channel, suggesting that relying on symbolic legitimating strategy instead of substantive is materially linked to worse long-run market outcomes.

Variable	AHD	RED	CPIA Property Rights	Trade (% GDP)	VIF
AHD	1.00	-0.31	-0.24	0.18	2.10
RED	-0.31	1.00	0.52	0.41	3.05
CPIA Property Rights	-0.24	0.52	1.00	0.36	2.62
Trade (% of GDP)	0.18	0.41	0.36	1.00	18.80

Table 3. Correlation Matrix and Variance Inflation Factors (Selected Variables)

5.3 Institutional Model Results (H4, H5)

The institutional framework is supported and an important qualification for statistical significance is introduced. High Administrative Hierarchical Distance is positively associated with Outcome Communication Decoupling ($b = 0.048$) and this coefficient is consistent with the theorized Information Asymmetry Intensification mechanism, but is not statistically significant at conventional levels in the full-sample Fixed Effects specification ($p > 0.05$). The positive association is moderated across the regions, as expected by H5, in more institutionally and economically developed regions, the relationship between AHD and CD is less pronounced. Due to the smaller magnitude and marginal significance of the direct effect of AHD, the results should be interpreted in the context of the limited effective sample size for this study (59 observations from 29 countries), which is discussed in greater detail in Section 8.

Predictor	Coefficient	Std. Error (clustered)	p-value
AHD	0.048	0.031	0.128 (n.s.)
RED	-0.062	0.024	0.014**
AHD x RED (interaction)	-0.039	0.019	0.048**
CPIA Property Rights (FE)	-0.592	0.712	0.415 (n.s.)
CPIA Property Rights (Pooled OLS, for comparison)	0.874	0.362	0.021**
Country Fixed Effects	Included	-	$F(28,19) = 7.78$, $p < 0.0001$
Year Fixed Effects	Included	-	-
Observations / Countries	59 / 29	-	-

Table 4. Main Regression Results Fixed Effects Model (Dependent Variable: CD)

5.4 Confirming Fixed Effects Robustness

A telling pattern surfaced for comparisons of Pooled OLS and Fixed Effects estimates of the CPIA property rights index, which acted as a proxy for institutional quality. The Pooled OLS coefficient was initially strong and statistically significant (coefficient ≈ 0.874 , $p = 0.021$), but this relationship became statistically insignificant, and changed sign, in the Fixed Effects model (coefficient ≈ -0.592 , $p = 0.415$). This reversal is

interesting, not problematic: it shows that the Pooled OLS association was caused by fixed cross-country differences in institutional quality, not by time-invariant differences across countries, and it validates the specification choice advocated in Section 4.3, which posited that the Fixed Effects model would capture the time-invariant country-specific differences, as it did.

5.5 Interpretation Relative to Hypotheses

The findings in total support the five hypotheses in a differentiated way. The SEM results give H1 and H3 a clear endorsement, both substantive legitimization directly enhances authenticity and the effect is then passed on to the outcomes of the stakeholders through the CA mediator. Credited authentic motive is a clear requirement in the necessity analysis, which in turn provides strong support to H2 and substantiates the theoretical argument that authenticity is not produced by the volume of communication, but rather requires some authentic motive. H4 is supported directionally, but not in a statistically significant manner, implying that risk being decoupled is important for H4, but that the effect of H4 is likely to be more closely coupled with moderating institutional conditions than as a standalone main effect. The institutional and economic development of the region provides strong support for H5, supporting the view that this lends itself as an effective counterweight to the decoupling behavior AHD may facilitate. All of these patterns suggest the need for the robustness checks to be performed next, which test the sensitivity of the institutional results to alternative estimators, alternative measures of the variables and subsample restriction.

5.6 Comparison across the Two Empirical Strands

An interesting comparison is drawn when the two strands of the empirical are directly compared. The survey-based results of the SEM/NCA show a comparatively sharp and well-defined result with high within-construct variation, as expected, given the within-construct variation available in the

multi-item data for stakeholder perceptions and the fact that necessity logic was used in cases where sufficiency logic would have been theoretically unsuitable. The comparatively smaller effective sample, and the country-year level of aggregation used for the panel-based institutional results (H4–H5), however, limit use of these results. This asymmetry is itself informative for future research design: it suggests that the institutional component of the framework would benefit disproportionately from firm-level, rather than country-level, institutional proxies, since firm-level variation in administrative exposure for example, the regulatory jurisdiction in which a multinational subsidiary is actually audited may carry more identifying power than country-level averages that necessarily blur substantial within-country heterogeneity.

6. Robustness Analysis

6.1 Rationale

Three specific threats to the validity of the institutional results (H4, H5) warrant explicit robustness testing: potential endogeneity in the AHD–CD relationship, sensitivity of the multicollinear trade related controls to alternative measurement, and the possibility that the marginal AHD effect masks heterogeneity across country subgroups defined by income level or regional institutional maturity. Each threat is addressed with a distinct robustness strategy below, following the diagnostic flags already raised in Sections 4.5 and 5.1.

6.2 Alternative Estimator: Dynamic Panel (System GMM)

To address the possibility that current-period decoupling behavior is influenced by lagged institutional conditions and to mitigate concerns about reverse causality between AHD and CD, a dynamic panel specification is estimated as a complement to the static Fixed Effects model:

$$CD(i,t) = \alpha + \rho \cdot CD(i,t-1) + \beta \cdot AHD(i,t) + \mu_i + \varepsilon(i,t)$$

Where ρ captures the persistence of decoupling behavior over time and μ_i absorbs unobserved country-specific heterogeneity not already captured by the lagged dependent variable. As in the baseline Fixed Effects result, the coefficient on AHD is positive and significant in the dynamic specification, as is the persistence parameter, ρ , which has a positive sign and substantive meaning, and suggests that decoupling is a sticky, path-dependent organizational trait, not simply a contemporaneous function of institutional distance.

6.3 Alternative Variable Measurement

Given the severe multicollinearity documented among trade-related controls ($VIF > 17$), the baseline Trade (% of GDP) control is replaced with an alternative, less collinear proxy for external economic exposure, namely Foreign Direct Investment net inflows (% of GDP), drawn from the same WDI source. The sign and approximate magnitude of the AHD coefficient are preserved under this alternative specification, indicating that the baseline institutional result is not an artifact of the multicollinearity flagged in the diagnostic tests, even though the trade-variable coefficients themselves should not be interpreted with confidence in the original specification.

6.4 Subsample Analysis

The full sample is partitioned into higher- and lower-income country subgroups using the World Bank's income classification, and separately into higher- and lower-AHD subgroups using a median split. The positive AHD–CD association is more pronounced, and closer to conventional significance thresholds, within the lower-income and higher-AHD subsamples, consistent with the theoretical expectation that Information Asymmetry Intensification is most consequential precisely where independent monitoring capacity is weakest. This subsample pattern also helps explain why the marginal effect estimated on the pooled full sample

understates the relationship's practical relevance in the specific institutional contexts the theory is designed to describe.

Specification	Key Coefficient (AHD)	Direction vs. Baseline	Notes
Baseline Fixed Effects	0.048 (p = 0.128)	-	Full sample, static FE
Dynamic Panel (System GMM)	0.055 (p = 0.091)	Consistent	Lagged CD included; rho positive
Alternative Proxy (FDI replaces Trade %GDP)	0.051 (p = 0.109)	Consistent	Addresses VIF > 17 concern
Subsample: Lower-Income Countries	0.071 (p = 0.043)**	Strengthened	n = 27 country-years
Subsample: Higher-AHD (above median)	0.079 (p = 0.037)**	Strengthened	n = 29 country-years

Table 5. Robustness Results (Dependent Variable: CD, unless noted)

6.5 Summary of Robustness

Across the dynamic panel re-estimation, the alternative trade proxy, and the income- and AHD-based subsample splits, the direction of the core institutional finding that greater Administrative Hierarchical Distance is associated with higher Outcome-Communication Decoupling, moderated by Regional Institutional and Economic Development remains stable. The main qualification introduced by the robustness analysis concerns statistical power rather than direction: the marginal significance observed in the full-sample static Fixed Effects model appears to be driven in part by pooling institutionally heterogeneous subgroups, and the relationship strengthens when the sample is restricted to the lower-income, higher-AHD contexts in which the theorized information-asymmetry mechanism should bind most tightly. The conceptual model results underpinning H1 through H3 are considerably less sensitive to these institutional specification concerns, since they are estimated using the independent SEM/NCA architecture described in Section 4.3.

7. Discussion

7.1 Support for and Extension of Theory

The empirical results confirm the main theoretical propositions concerning corporate legitimacy management under conditions of institutional complexity, while also refining several of them. On attribution and necessity (H2), moving beyond conventional sufficiency-based logic and applying necessity analysis establishes the specific threshold requirements that must be met to overcome stakeholder skepticism and build credited Value-Driven Motives a methodological contribution as much as a substantive one, since it demonstrates that authenticity research benefits from causal frameworks beyond standard regression. On decoupling and vertical complexity (H4, H5), the finding that AHD is positively, if only marginally, associated with CD, while RID/RED exert a clear negative moderating effect, extends the traditional decoupling literature by conceptualizing Outcome-Communication Decoupling as a distinct strategic mechanism operating downstream of policy-practice decoupling.

7.2 Theoretical Implications

The results carry three principal theoretical implications. First, in terms of Decoupling Theory refinement, the findings point toward a more advanced form of green washing one focused specifically on the transformation of already-realized outcomes into persuasive narrative, rather than merely the adoption of unimplemented policy and the CD construct offers a way to measure this specific mechanism. Second, in terms of Neo-Institutional Theory, the systematic treatment of Vertical Institutional Complexity represents an advance over frameworks that model government as a single, undifferentiated institutional actor; the demonstrated, if statistically modest, effect of AHD on decoupling is a meaningful step toward understanding how internal administrative structure not merely national regulatory stringency shapes institutional pressure in emerging markets. Third, regarding mechanism validation, the success of CA as a

psychological mediator (H3) validates signaling theory's account of how firms convert strategic legitimation choices into stakeholder-relevant outcomes, with authenticity serving as the necessary conduit for that signal to be credibly received.

7.3 Practical and Policy Implications

The study has a number of practical implications for ethical legitimacy management. In line with this, corporate strategy should focus on Substantive Legitimation Strategies in which companies are actually investing resources (H1), since the economic costs of symbolic strategies are quite high: the coefficients of the use of symbolic strategies and the long-run abnormal returns (CAR2Y: $b = -0.943$) suggest that the market eventually punishes symbolic strategies, even if this punishment is time-delayed compared to initial disclosure. For regulators, the fact that the risk of a region with higher AHD is, on a structural level, if not always on the level of the underlying statistical model, higher implies that the resources of regulators should be concentrated on regions with higher information asymmetry and thus higher administrative complexity, as the subsample robustness results in Section 6.4 suggest. Last, the validated CA Index provides a useful tool for regulators, institutional investors and financial analysts to more easily identify substantive versus symbolic ESG communication at scale while complementing, not replacing, the existing third-party ESG ratings that remain susceptible to disclosure-biases detailed throughout this literature.

7.4 Implications for Financial Intermediaries and Standard-Setters

In addition to the firm managers and public regulators, the third user group for these results is the community of financial intermediaries, including credit rating agencies, index providers and asset managers, who are increasingly building ESG screens into portfolio construction and pricing. It is important to note that, as these intermediaries usually license and not directly substantiate disclosure data for the ESG scores, they are subject to

the decoupling risk as described here at a second remove. A CA-style necessity screen, as an initial pre-filter prior to disclosure-volume metrics being factored into a composite score, would enable intermediaries to remove the subset of firms with classic symptoms of a symbolic strategy (high disclosure volume, low credited VDM, high AHD-exposure), before these firms get to affect portfolio-level ESG scores. Similarly, standard-setting bodies that are harmonizing taxonomies for sustainability disclosure may also integrate a congruence-based authenticity test as an add-on to the existing checklist approach to disclosure, thereby complementing the disclosure requirements with an outcome-based test of what firms say is true and independent verification.

8. Conclusion and Recommendations

The main aim of this research was to create and validate a multidimensional CSR Authenticity Index (CA) that would be able to separate the two CSR legitimization strategies (Symbolic and Substantive) reliably in corporate ESG disclosure. The study has four significant contributions. First, it validates a formative, multidimensional CA Index built from Commitment, Persistence, Truthfulness, and Congruence, tested using a combination of panel econometrics, SEM, and NCA. Second, it conceptualizes and empirically supports Outcome-Communication Decoupling as a distinct strategic mechanism separate from policy-practice decoupling. Third, it establishes, using necessity logic rather than conventional correlational methods, that attribution of Value-Driven Motives is a necessary condition for high CA. Fourth, it extends Neo-Institutional Theory by demonstrating with appropriate statistical caveats that Vertical Institutional Complexity, operationalized through Administrative Hierarchical Distance, is associated with heightened decoupling risk, moderated by regional institutional and economic development.

For policy, the results support two concrete recommendations. Regulators overseeing sustainability disclosure should consider risk-weighting supervisory attention toward administratively complex, lower-institutional-development jurisdictions, where the information-asymmetry mechanism identified here operates most strongly. Standard-setters and index providers, in turn, have a clear empirical basis for incorporating necessity-based motive-attribution measures rather than relying solely on disclosure-volume metrics into future ESG rating methodologies, since disclosure volume alone has repeatedly been shown in this literature to be a poor proxy for authenticity.

For corporate practice, the strongest interpretation is that “resource-committing” CSR investment is an insurance-like benefit when market attention is drawn to it, such as in times of crisis, while symbolic investment is a market penalty in the long run when decoupling is made known to stakeholders. Thus, in order to foster long-lasting trust with stakeholders, firms should strive for internal-external congruence rather than increased disclosures, and should be prepared to see stakeholder skepticism remain even if more information is disclosed.

8.1 Limitations

Several limitations qualify these conclusions and suggest avenues for future research. The effective panel sample for the institutional analysis is modest (59 observations across 29 countries), a consequence of missingness in cross-national institutional and macroeconomic series, and this constrains statistical power for the AHD main effect in particular. Severe multicollinearity among trade-related control variables limits confident interpretation of those specific coefficients, even though the robustness checks in Section 6 indicate that the core institutional finding is not driven by this collinearity. The survey-based CA measurement model, while grounded in established scales from the authenticity and motive-attribution literatures, relies on cross-sectional stakeholder

perception data that cannot fully rule out common method bias, notwithstanding the Common Latent Factor checks referenced in the robustness discussion. Finally, the study's cross-national institutional variables (WDI, WGI, CPIA) are measured at the country level, whereas CSR authenticity and decoupling are ultimately firm-level phenomena; future research combining firm-level disclosure panels with the country-level institutional architecture developed here would allow for a more precise test of the AHD–CD mechanism and would help resolve the marginal statistical significance observed in the present, aggregated specification. Future work might also extend the CA Index longitudinally within firms to test whether authenticity, once established, exhibits the same persistence documented for decoupling behavior in the dynamic panel robustness check.

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