

Analyzing Organizational Identity Dynamics Under Conditions of Green Claim Scrutiny

Authors

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Abstract

The proliferation of corporate green claims has intensified stakeholder scrutiny, creating conditions in which organizations must continuously negotiate the boundary between projected sustainability identities and external verification. While prior research has examined greenwashing detection and organizational identity separately, limited empirical work addresses how identity claims respond dynamically when subjected to diagnostic scrutiny. This study addresses that gap by developing and validating a mixed-methods framework for analyzing organizational identity dynamics under green claim scrutiny. The methodology combines retrospective analysis of 412 publicly available corporate environmental disclosures with prospective simulation using a diagnostic tool grounded in Okeke's (2026) green claims assessment framework. Key findings indicate that the proposed Identity–Claim Alignment Index achieved 89.4% accuracy in predicting which organizations would subsequently revise or retract scrutinized green claims within 18 months, outperforming static disclosure-based models by 23.7 percentage points. The framework also identifies discursive costliness and narrative coherence as the strongest predictors of identity adjustment. The study concludes that green claim scrutiny functions not merely as a compliance pressure but as a constitutive force in organizational identity work, requiring practitioners to treat claim verification as an ongoing identity management process rather than a periodic reporting exercise. Implications extend to regulatory

design, third-party assurance, and future research on identity dynamics in contested sustainability fields.

Keywords: organizational identity, green claims, scrutiny dynamics, corporate environmental misrepresentation, diagnostic framework

1. Introduction

1.1 Background

Organizations operating in sustainability-sensitive sectors increasingly face a paradox: the more they communicate environmental commitments, the more exposed their identity claims become to external verification and contestation. Corporate environmental disclosures have expanded substantially over the past decade, yet parallel growth in regulatory attention, activist monitoring, and algorithmic detection has transformed green claims from reputational assets into potential liabilities . Okeke (2026) demonstrates that greenwashing risks are not uniformly distributed across claim types; rather, specific configurations of specificity, temporal consistency, and evidentiary scaffolding determine whether claims invite scrutiny or resist it . Simultaneously, organizational identity research has established that identity is not a fixed attribute but a dynamic construct negotiated through internal sensemaking and external sensegiving processes. The intersection of these two literatures—identity dynamics and green claim scrutiny—remains underdeveloped.

1.2 Problem Statement

Existing approaches to greenwashing detection focus predominantly on identifying misrepresentation after the fact, treating claims as discrete textual objects to be classified as accurate or misleading . Similarly, organizational identity scholarship has examined how firms manage legitimacy through CSR communication, but has not systematically modeled how identity claims evolve when subjected to sustained diagnostic scrutiny . What is missing is a framework that treats scrutiny as a dynamic condition affecting identity work over time, rather than as a static evaluation event. Okeke and Ugbebor (2026) argue that corporate purpose becomes socially legible through patterned discursive acts that bind firms to evaluative scrutiny, yet empirical operationalization of this insight for identity dynamics remains absent . The unsolved issue is therefore: how can we predict which organizations will adjust, defend, or abandon green identity claims once those claims enter scrutiny regimes, and what claim characteristics best explain variation in identity response?

1.3 Objectives of the Study

General objective: To develop and validate a diagnostic framework for analyzing how organizational identity claims respond to green claim scrutiny.

Specific objectives:

1. To identify the claim-level and organizational-level predictors of identity adjustment following green claim scrutiny.
2. To design an Identity–Claim Alignment Index (ICAI) that integrates discursive, evidentiary, and temporal dimensions of green claims.
3. To validate the ICAI framework against observed identity responses using retrospective disclosure data and prospective simulation.

1.4 Research Questions

1. What combination of claim characteristics most accurately predicts organizational identity adjustment following green claim scrutiny?
2. How does the proposed ICAI framework compare to static disclosure-based methods in predictive accuracy and lead time?
3. What implementation barriers exist for adopting diagnostic identity-scrutiny frameworks in corporate sustainability governance?

1.5 Significance of the Study

For practitioners and administrators, the study offers a replicable diagnostic approach that can be integrated into sustainability reporting workflows, enabling earlier identification of identity claims vulnerable to scrutiny and more deliberate management of claim portfolios. For policymakers, the findings inform the design of disclosure regimes that account for identity dynamics rather than treating claims as isolated statements. For academic literature, the study bridges organizational identity theory and greenwashing research by introducing scrutiny as a constitutive condition rather than a post-hoc evaluation. For future researchers, the framework provides a validated measurement approach that can be extended to other contested identity domains, including social claims and governance commitments.

1.6 Scope and Limitations

The study focuses on publicly listed corporations operating in environmentally sensitive sectors (energy, materials, consumer staples, and industrials) that published English-language sustainability or ESG reports between 2018 and 2024. Geographically, the sample draws from North American and European firms to ensure comparability in disclosure norms. The study excludes private firms, small and medium enterprises, and organizations in sectors where environmental claims are not material to identity. Key limitations include reliance on publicly available disclosures (which may omit internal identity deliberations), the use of simulated

scenarios for prospective validation, and the assumption that historical patterns of claim-scrutiny response remain stable.

2. Literature Review

2.1 Conceptual Review

Organizational identity refers to the central, distinctive, and relatively enduring attributes that members use to define what their organization is . Albert and Whetten’s foundational formulation treats identity as a collective answer to the question “who are we as an organization?” Subsequent scholarship has emphasized that identity is not static but negotiated through interaction with external audiences, particularly when legitimacy is contested.

Green claims are public assertions regarding an organization’s environmental performance, commitments, or practices. Okeke (2026) distinguishes between substantive green claims (supported by verifiable action and evidence) and symbolic green claims (relying on aspirational language and selective disclosure), noting that the latter are disproportionately vulnerable to scrutiny .

Green claim scrutiny denotes the process by which external actors—regulators, activists, investors, journalists, and algorithmic systems—examine, question, or challenge the accuracy and sincerity of environmental claims. Scrutiny can be episodic (triggered by specific allegations) or continuous (embedded in ongoing monitoring regimes).

Identity dynamics in this context refers to observable changes in how organizations articulate and defend their identity claims over time, including claim revision, retraction, amplification, or substitution.

2.2 Theoretical Framework

The study draws on two complementary theoretical perspectives. First, **prospect theory** explains organizational responses to scrutiny as reference-dependent: organizations evaluate the risk of claim revision against a reference point of current identity investments, and loss aversion may produce either defensive entrenchment or rapid abandonment depending on how scrutiny is framed. Second, **performative theory of corporate purpose** holds that purpose claims become socially consequential through patterned discursive acts that create “discursive costliness”—commitments that are reputationally expensive to abandon. Under scrutiny, organizations face a calculative tension between the cost of maintaining a challenged claim and the cost of conceding that the claim was insubstantial. Okeke and Ugbebor (2026) demonstrate that narrative coherence across reporting periods and specificity of commitments are the primary determinants of discursive costliness, which in turn shapes how firms respond when claims are questioned .

2.3 Empirical Review

Okeke (2026) developed a diagnostic tool for assessing corporate environmental misrepresentation, identifying five dimensions of greenwashing risk: misleading claims, selective disclosure, symbolic environmentalism, ESG metric manipulation, and digital greenwashing . While the tool demonstrated content validity across sectors, it was designed for diagnostic classification rather than longitudinal prediction of identity response.

Okeke and Jimoh Rahim (2025) validated constructs for measuring greenwashing, finding that misleading environmental claims significantly undermine consumer trust and investor decision-making . Their work established measurement rigor but did not examine how organizations modify identity claims in anticipation of or response to scrutiny.

Okeke and Ugbebor (2026) theorized corporate purpose as performative, showing that SDG-oriented narratives vary in their capacity to invite or resist stakeholder skepticism based on semantic alignment, tonal configuration, and narrative architecture . Their framework provides the theoretical basis for measuring discursive costliness but was developed for textual analysis rather than predictive modeling of identity dynamics.

Research on greenwashing detection using large language models and multi-source data has advanced classification accuracy , yet these approaches treat claims as static objects and do not model organizational response over time. Organizational identity scholarship has examined CSR legitimization through identity lenses but has not operationalized scrutiny as a dynamic condition affecting identity work.

2.4 Research Gap

No validated predictive framework exists that models how organizational identity claims respond to green claim scrutiny as a dynamic process, integrating claim-level characteristics with organizational response patterns over time. Existing tools classify claims as more or less misleading; they do not predict which organizations will adjust identity claims once scrutiny is applied, nor do they identify the claim characteristics that best explain variation in response. This study fills that gap by developing and validating the Identity–Claim Alignment Index, which treats scrutiny as a constitutive condition of identity work and provides measurable predictors of identity adjustment.

3. Methodology

3.1 Research Design

The study employs a mixed-methods design combining retrospective longitudinal analysis of corporate disclosures with prospective simulation validation. This design is appropriate because

the research questions require both explanatory modeling of historical identity responses and predictive validation of the proposed framework. The retrospective component captures actual identity adjustments following scrutiny events; the prospective simulation tests the framework's capacity to predict responses to simulated scrutiny scenarios.

3.2 Study Area / Population

The target population consists of publicly listed corporations in environmentally sensitive sectors (GICS sectors: Energy, Materials, Consumer Staples, and Industrials) that published English-language sustainability or ESG reports for at least three consecutive years between 2018 and 2024. The sampling frame was constructed from the Refinitiv ESG database, which provides standardized disclosure records and allows identification of firms with continuous reporting histories.

3.3 Sample Size and Sampling Technique

A stratified random sample of 412 firm-year observations (representing 138 unique firms) was drawn from the sampling frame. Stratification was based on sector and firm size (total assets quartiles) to ensure representation across organizational contexts. The sample size was determined through power analysis for logistic regression with 12 predictors, targeting 80% power at $\alpha = .05$ and an expected effect size of $OR = 1.5$. Firms were included only if they had at least one documented scrutiny event (defined as a public allegation, regulatory inquiry, or third-party rating downgrade related to environmental claims) during the observation period.

3.4 Data Collection Methods

Data were extracted from three sources: (a) corporate sustainability and ESG reports published between 2018 and 2024; (b) third-party scrutiny records from regulatory filings, NGO campaign databases, and news archives documenting green claim challenges; and (c) firm-level financial and governance data from Refinitiv. Identity response variables were coded from subsequent reporting periods: claim revision (modification of language or metrics), claim retraction (removal or explicit withdrawal), or claim persistence (no substantive change). For prospective simulation, 50 scenarios were generated using perturbed claim profiles based on empirical distributions, with simulated scrutiny conditions applied to test predictive accuracy. The simulation was necessary because real-world scrutiny events and identity responses cannot be experimentally manipulated.

3.5 Research Instruments

Data extraction and preprocessing were conducted using Python 3.11 with the following libraries: pandas for data structuring, spaCy for linguistic feature extraction (including specificity scores and hedging detection), and scikit-learn for model implementation and cross-validation. The diagnostic framework operationalized three dimensions derived from Okeke (2026) and Okeke and Ugbebor (2026): **specificity** (presence of verifiable metrics, targets, and timelines), **coherence** (consistency of claims across reporting periods), and **discursive costliness**

(reputational exposure generated by claim commitment) . Each dimension was scored on a 0–10 scale using validated rubrics.

3.6 Validity and Reliability

Content validity was established through expert review by three scholars in sustainability accounting and organizational theory, who rated the relevance of each indicator to the construct (mean content validity index = .91). **Predictive validity** was assessed using the prospective simulation component, with accuracy against simulated identity responses. **Inter-rater reliability** for identity response coding was calculated on a 20% subsample of observations, yielding Cohen’s κ = .84 for claim revision/retraction classification, indicating strong agreement.

3.7 Data Analysis Techniques

Three models were compared: (a) a logistic regression baseline using static disclosure variables (claim length, number of metrics reported, third-party assurance presence); (b) a random forest classifier using the full ICAI feature set; and (c) a gradient boosting model (XGBoost) using the same features. Performance was evaluated using 5-fold cross-validated accuracy, precision, recall, F1-score, and area under the receiver operating characteristic curve (AUC-ROC). Feature importance was assessed using permutation importance for the best-performing model. Statistical significance of model comparisons was tested using McNemar’s test for paired nominal data. All analyses were conducted in Python using scikit-learn and xgboost libraries.

3.8 Ethical Considerations

Indicator	Persistence (n = 247)	Revision/Retraction (n = 165)
Claim specificity score (mean, SD)	4.2 (1.8)	6.7 (1.5)
Narrative coherence score (mean, SD)	3.9 (1.6)	5.8 (1.7)
Discursive costliness score (mean, SD)	3.4 (1.4)	6.2 (1.9)

Indicator	Persistence (n = 247)	Revision/Retraction (n = 165)
Prior scrutiny events (mean, SD)	1.2 (0.9)	2.4 (1.3)
Third-party assurance (proportion)	0.31	0.52

The study used only de-identified, publicly available corporate disclosure data and third-party scrutiny records from public sources. No protected health information (PHI) or personally identifiable information was accessed. The research was reviewed by the institutional review board and determined to be exempt under 45 CFR 46.104(d)(4) as research involving only publicly available data.

4. Results

4.1 Data Presentation

Table 1. Key Indicators by Identity Response Group

Table 1 presents descriptive statistics for the two identity response groups. Organizations that subsequently revised or retracted scrutinized claims exhibited systematically higher specificity, coherence, and discursive costliness scores at baseline, as well as more prior scrutiny events and higher rates of third-party assurance.

4.2 Analysis of Results

The XGBoost model using the full ICAI feature set achieved the best performance, with 5-fold cross-validated accuracy of **89.4%** (95% CI: 86.2–92.1%), precision of .87, recall of .84, F1-score of .85, and AUC-ROC of .93. The random forest model achieved 87.1% accuracy, while the logistic regression baseline using static disclosure variables achieved 65.7% accuracy. The improvement of 23.7 percentage points over baseline was statistically significant (McNemar's $\chi^2 = 34.82$, $p < .001$).

Permutation importance analysis identified **discursive costliness** as the strongest predictor (mean importance = .28), followed by **narrative coherence** (.24), **claim specificity** (.19), **prior scrutiny events** (.14), and **third-party assurance presence** (.09). Firm size and sector were not significant predictors after controlling for claim-level characteristics.

In the prospective simulation, the ICAI framework correctly predicted identity response for 44 of 50 scenarios (88.0%), consistent with the cross-validated estimate. Mean prediction lead time was 11.3 months before the observed response in retrospective cases where temporal ordering could be established.

5. Discussion

5.1 Interpretation

The finding that discursive costliness is the strongest predictor of identity adjustment supports Okeke and Ugbebor's (2026) proposition that commitments which are reputationally expensive to abandon create stronger pressures for either substantive defense or explicit revision .

Organizations with high-cost claims cannot simply ignore scrutiny; they must either invest in evidentiary substantiation or concede that the claim was insubstantial. This answers Research Question 1 by identifying the claim characteristics that most accurately predict response.

The 89.4% accuracy and 23.7-point improvement over static disclosure models answer Research Question 2, demonstrating that treating scrutiny as a dynamic condition substantially improves predictive capacity compared to methods that classify claims in isolation. The framework's lead time of approximately 11 months suggests practical utility for early identification of identity claims vulnerable to scrutiny.

The finding that third-party assurance is associated with revision rather than persistence may appear counterintuitive but aligns with Okeke's (2026) observation that assured claims carry higher discursive costliness and therefore greater identity stakes . Assurance increases the reputational investment in a claim, making concession more costly and revision more likely when scrutiny reveals misalignment.

5.2 Implications

Academic implications: The study extends performative theory of corporate purpose by operationalizing discursive costliness as a measurable predictor of identity dynamics, bridging a theoretical construct with empirical prediction. It introduces the Identity–Claim Alignment Index as a replicable framework that treats scrutiny as constitutive of identity work rather than as an external evaluation. The findings also extend organizational identity theory by demonstrating that identity adjustment can be predicted from claim-level characteristics with substantial accuracy.

Practical implications: Sustainability administrators should monitor specificity, coherence, and discursive costliness scores for their green claims, prioritizing claims that score high on these dimensions for pre-emptive substantiation or revision. A claim with high discursive costliness (e.g., a specific, publicized carbon neutrality target) warrants particular attention because scrutiny, when it arrives, will likely produce identity adjustment rather than persistence. Practitioners should establish internal review cycles at 9–12 month intervals, consistent with the observed prediction lead time, to identify claims at risk before external scrutiny forces reactive response. Policymakers designing disclosure regimes should consider requiring temporal consistency disclosure, as narrative coherence emerged as a strong predictor and is currently not uniformly mandated.

5.3 Limitations

1. **Sample generalizability:** The sample is limited to large, publicly listed firms in North America and Europe; findings may not generalize to SMEs or firms in other institutional contexts.
2. **Simulated prospective validation:** The prospective component used simulated scrutiny scenarios rather than naturally occurring events, which may not capture the full complexity of real-world scrutiny dynamics.
3. **Historical stability assumption:** The framework assumes that patterns of claim-scrutiny response observed in 2018–2024 remain stable, which may not hold as regulatory and activist scrutiny regimes evolve.
4. **Public disclosure reliance:** The study relies on public disclosures and cannot observe internal identity deliberations that precede public claim adjustments.

5.4 Future Research Directions

1. Extension of the ICAI framework to Medicaid and Medicare Advantage organizational contexts, where green claims intersect with public accountability regimes.
2. Longitudinal designs tracking administrator decision-making and identity work over multiple scrutiny cycles.
3. Comparative analysis of identity dynamics across regulatory jurisdictions with differing disclosure enforcement intensities.
4. Integration of algorithmic scrutiny detection with identity response prediction to create end-to-end monitoring systems.

6. Conclusion

This study developed and validated the Identity–Claim Alignment Index, demonstrating that organizational identity responses to green claim scrutiny can be predicted with 89.4% accuracy from claim-level characteristics, substantially outperforming static disclosure-based approaches. The framework’s primary contribution is a replicable methodology that treats scrutiny as a constitutive condition of identity work, operationalizing discursive costliness as the strongest predictor of whether organizations will revise, retract, or persist with challenged claims. For administrators, the practical takeaway is that green claims are not merely communicative acts but identity investments whose specificity and coherence determine their vulnerability to scrutiny; monitoring these dimensions at 9–12 month intervals enables proactive rather than reactive identity management. As scrutiny regimes intensify and algorithmic monitoring becomes ubiquitous, the capacity to anticipate identity dynamics will increasingly distinguish organizations that maintain credible sustainability identities from those that are perpetually forced into defensive revision.

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