

Review Article

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A Neurosemantic Approach to Vision and Mission Alignment: Construct Formalization, Metric Design, and Pilot Plausibility Testing

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ABSTRACT

This paper proposes that semantic alignment between corporate vision and mission statements is a probabilistic predictor of excess stock returns. Grounded in Learnable Theory and integrated with signaling theory, organizational legitimacy, and cognitive consistency, it introduces the Complementary Semantic Distance Index (CSDI): a non-linear measure of neurosemantic distance based on an 81-class taxonomy derived from four core human needs and three affective polarizations. The contribution is primarily conceptual and instrumental, and the empirical analysis is exploratory. Using a sample of 100 US firms ($n = 65$ with valid excess return data), results show a significant positive association between CSDI and excess returns ($r = 0.370$, $p = 0.002$, $R^2 = 13.7\%$). This result holds up under a robustness programme of ambiguity reclassification and Monte Carlo perturbation testing, both of which indicate the association is not an artifact of single-coder classification variance. Three boundary conditions (sectoral moderation, macro-shock override, and communication competence) define the scope of the claim, and a structured agenda specifies what confirmatory testing will require.

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Introduction

This paper does three things: it introduces a theoretical framework for measuring the semantic coherence of corporate strategic language, proposes a formal metric (the CSDI), and presents pilot empirical evidence that this coherence associates with stock performance. It does not claim causal inference. Its primary contribution is construct formalization, instrument design, and boundary-condition theorization, supplemented by the first robustness programme for the CSDI metric.

Corporate vision and mission statements are among the most deliberately crafted pieces of organizational language. They are reviewed by boards, refined by consultants, and broadcast to investors, employees, and customers. Yet relatively little formal theory addresses whether the internal semantic structure of these statements (specifically, how coherently they relate to each other in the cognitive-affective orientations they activate) carries information that stakeholders respond to. This paper proposes that it does, and introduces a framework for measuring that coherence systematically.

The question is located at an intersection of three established theoretical traditions. From signaling theory, we know that organizational communications function as costly signals: their persuasive force derives not from their content alone but from the

credibility they establish through consistency [1]. From legitimacy theory, semantic alignment between vision and mission may function as a legitimacy-sustaining signal precisely because it confirms that the organization's stated purposes are mutually reinforcing [2]. From the cognitive consistency literature, human perception is organized to resolve inconsistency: an investor who reads a vision statement that activates one need-orientation and a mission statement activating an incompatible orientation experiences a mild cognitive dissonance that may cumulatively reduce confidence in the organization's coherence [3,4].

These three traditions converge on a common prediction: organizations whose strategic language signals coherent identity should, on average, command greater stakeholder confidence and, in turn, superior performance relative to comparable firms. The Complementary Semantic Distance Index (CSDI) is the instrument designed to measure that alignment. Its construction, properties, and empirical behavior are the primary subject of this paper.

The paper is explicit about its scope. It is a theory-forward, instrument-construction exercise with an accompanying pilot plausibility test and a formal robustness programme. The pilot sample ($n = 65$ with valid excess return data), single-coder classification procedure, and cross-sectional design are insufficient for confirmatory hypothesis testing or causal inference. The paper proceeds as follows: Section 2 develops the theoretical framework; Section 3 states five formal hypotheses; Section 4 specifies the CSDI; Section 5 describes data and analytic design; Sections 6–10 report results, robustness, sector patterns, and case illustrations; Sections 11–16 address the Sectoral Moderation Matrix, practical

application, discussion, leadership implications, and ethics; Sections 17–19 present the confirmatory agenda, synthesis, and conclusion.

Theoretical Framework

This section develops the theoretical architecture in four steps: (1) the Learnable Theory constructs that ground the CSDI; (2) integration with signaling theory, legitimacy theory, and cognitive consistency; (3) the proposed causal mechanism; and (4) boundary conditions. Operational definitions of all technical terms are provided at first use.

Learnable Theory: Constructs and Operational Definitions

Learnable Theory holds that organizational language is not semantically neutral: words, phrases, and statements activate cognitive-affective meaning-structures in readers and listeners that shape subsequent perceptions, judgments, and behaviors [5]. The foundational construct is the learnable: a cognitive-affective meaning-unit that a linguistic expression activates in a given cultural and communicative context, and that primes a set of associated expectations, values, and behavioral affordances. Learnables are not dictionary definitions; they are the clusters of associations and evaluative orientations that words reliably evoke, operating partly below the threshold of conscious deliberation [6]. The CSDI does not classify statements by their surface vocabulary but by the dominant cognitive-affective orientation (the learnable) that their primary semantic units are most likely to activate.

Learnables are organized into learnable fields: culturally specific configurations of the universal human capacity to form cognitive-affective associations. Vision and mission statements function as symbolic attractors: linguistic constructs that draw stakeholders' cognitive-affective orientations toward a particular configuration of needs and values. The term 'attractor' captures a dynamic property: just as a physical attractor draws trajectories toward a stable state, a symbolic attractor draws interpretive trajectories toward a stable cognitive-affective configuration. When vision and mission function as compatible symbolic attractors, the organization presents a coherent symbolic landscape. When they activate incompatible configurations, the resulting symbolic dissonance may communicate inconsistency in organizational identity.

A related construct, the umbra cone, captures the region of neurosemantic space that a statement does not address. An organization whose vision concentrates on Self-Actualization-Positive learnables casts an umbra cone over the Safety and Survival need-domains. Umbra cones also function as an ethical safeguard: organizations that engineer high CSDI scores through surface lexical alignment while shadowing the need-domains most relevant to their stakeholders will tend to reveal that gap in their operational communication over time (Section 16). A neurosemantic configuration is the unit of classification: an ordered category in the 81-class matrix that characterizes the dominant cognitive-affective orientation of a linguistic expression along two dimensions: need-domain and affective polarity.

The Neurosemantic Taxonomy: Four Needs, Three Valences, 81 Configurations

The classification matrix is organized along two theoretically grounded dimensions. The first is the fundamental human need primarily addressed by the linguistic expression. Following a convergent tradition in motivational psychology, the framework identifies four universal need-domains: Survival (physical

continuity, resource access, material security); Safety (protection from harm, systemic stability, risk management); Sociality (belonging, connection, relational recognition, community); and Self-Actualization (mastery, growth, creative expression, transcendence of current limits) [7-9].

The second dimension is affective polarization: the emotional orientation (Positive, Neutral, or Negative) with which the statement addresses the relevant need-domain. A statement activating Safety-Negative learnables ('eliminating risk,' 'zero defects') addresses the safety need through threat-avoidance language. A Safety-Positive statement ('providing security,' 'ensuring peace of mind') addresses the same need through attainment. This distinction matters because threat-avoidance framing activates a different cognitive-affective state than attainment framing, even when the underlying need-domain is identical [10]. The cross-product of four need-domains and three affective polarizations generates 81 neurosemantic configurations. Each vision and mission statement is assigned to one configuration based on its dominant noun-prime and the affective valence of the need-domain it most strongly activates (Appendix A). The taxonomy has not yet been subjected to formal psychometric validation. This is the most significant outstanding limitation and is addressed in Section 18 (Priorities 1 and 5).

Integration with Signaling Theory, Legitimacy Theory, and Cognitive Consistency

Signaling theory holds that organizational communications function as signals in information-asymmetric environments: their persuasive power derives from the credibility they establish through observable attributes that are costly to fake [1,11]. Semantic alignment between vision and mission functions as a signal of organizational identity coherence: maintaining coherent linguistic orientation across two formally distinct strategic documents is more costly for organizations whose identity is genuinely fragmented than for those operating from a unified cognitive-affective framework.

Legitimacy theory argues that organizations sustain stakeholder support by conforming to the cognitive and evaluative frameworks that their audiences apply [2,12]. Semantic alignment contributes to cognitive legitimacy (the taken-for-granted acceptance of an organization's purpose as comprehensible and appropriate) by presenting a unified, internally consistent account of organizational identity. Legitimacy theory predicts that the CSDI effect will be stronger in sectors where cognitive legitimacy is a primary driver of stakeholder confidence (Narrative-Dependent sectors; Section 11).

Cognitive consistency theory provides the micro-level psychological mechanism through which organizational-level signaling and legitimacy effects are realized in individual investor behavior [3,4]. When an investor reads a vision statement activating Sociality-Positive learnables and a mission statement activating Self-Actualization-Positive learnables, the resulting cognitive-affective dissonance may cumulatively reduce confidence in the organization's coherence. This mechanism is consistent with the broader literature on narrative coherence and investor attention [13,14].

Semantic Resonance and the Mechanism of Performance Effects
The three theoretical traditions converge on a single proposed mechanism, termed semantic resonance: the degree to which an organization's symbolic architecture activates coherent and

mutually reinforcing cognitive-affective orientations in its investor and stakeholder community. Higher semantic resonance is predicted to increase stakeholder cognitive legitimacy, reduce cognitive dissonance in stakeholder evaluations, and strengthen the credibility of the organization's strategic identity signal. The mechanism is explicitly conditional: semantic resonance is most consequential when (a) the sector's value creation is substantially mediated by symbolic-narrative processes; (b) the macroeconomic environment is stable enough that proximal operative forces do not overwhelm the distal symbolic signal (H1b); and (c) the CSDI is not simply a proxy for a broader organizational communication competence (H1c).

Hypotheses

Five hypotheses are stated below. H1 is the primary prediction from the semantic resonance mechanism. H1b and H1c formalize conditions under which H1 is expected to be suppressed or alternatively explained. H2 tests the Sectoral Moderation Matrix. H3 evaluates CSDI formula design. No hypothesis is treated as confirmed by the pilot; all are carried forward to the confirmatory agenda.

H1 (Main Hypothesis): Higher semantic consistency between vision and mission statements, as measured by the CSDI, is positively associated with organizational excess stock returns across sectors, operating through the mechanism of semantic resonance.

H1: Higher semantic consistency between vision and mission statements, as measured by the CSDI, is positively associated with organizational excess stock returns across sectors, operating through the mechanism of semantic resonance: the coherent activation of compatible cognitive-affective orientations in the investor and stakeholder community. **H1b (Macro-Shock Override):** When an organization experiences a severe exogenous shock (supply chain disruption, structural demand collapse, commodity price dislocation, or material legal liability) exceeding approximately 15% of market capitalization, the CSDI–performance association will be non-significant or negative for that affected firm-period, irrespective of linguistic alignment score.

H1c (Communication Competence Alternative): The positive association between CSDI scores and excess returns is mediated, in whole or in part, by a latent organizational communication competence variable rather than reflecting a direct causal effect of vision–mission alignment per se.

H2 (Sector Moderation): The CSDI–performance association is stronger in Narrative-Dependent sectors (Healthcare, Consumer Discretionary) than in Operations-Dependent sectors (Industrials), where value creation is dominated by physical output and commodity-price indicators.

H3 (Formula Superiority): The CSDI's inverse-difference formulation accounts for more variance in excess returns and achieves greater statistical significance than the raw absolute difference (RAD) comparator.

The Complementary Semantic Distance Index: Instrument Design

This section specifies the CSDI formula, explains each design choice theoretically, and states what the instrument measures and does not measure.

The CSDI is defined as:

$$\text{CSDI} = 1 / (1 + |\text{VisionClass} - \text{MissionClass}|)$$

VisionClass and MissionClass are the integer codes identifying the neurosemantic configurations assigned to each statement from the 81-class taxonomy. The formula yields a score in (0, 1]: a score of 1.000 indicates perfect symbolic alignment (identical configurations); scores approaching 0 indicate maximum divergence. The term 'complementary' designates that the index measures preserved alignment rather than accumulated distance.

Three design choices define the formula, each theoretically motivated. The inverse-difference structure was chosen over a raw absolute difference because the semantic resonance mechanism predicts non-linear effects: the first unit of symbolic divergence from perfect alignment is expected to be disproportionately disruptive, while subsequent increments carry decreasing marginal cost. The inverse-difference formulation captures this curvature, assigning a steep penalty to small divergences and an attenuating penalty to large ones. The formula comparison in Section 7 confirms that the raw absolute difference produces a theoretically incoherent result (negative coefficient), validating this design choice.

An important interpretive constraint: the CSDI measures symbolic distance between two classified statements, not statement quality, semantic richness, or strategic appropriateness. A CSDI of 1.000 means that vision and mission have been assigned to the same neurosemantic configuration. It does not mean the statements are well-written, authentic, or strategically optimal.

Data, Classification Procedure, and Analytic Design

This section describes both datasets, states the classification procedure and its limitations with precision, and specifies what the design can and cannot test.

Dataset 1: Vision and Mission Corpus

The linguistic dataset comprises vision and mission statements from 100 US corporations across 10 industry sectors. Statements were sourced from publicly available corporate communications and are reproduced in full in Appendix A. The sample is restricted to large-capitalization US companies with sustained public visibility and publicly disclosed vision and mission statements, which limits generalizability to smaller firms, non-US corporations, and organizations without formal public strategy documents.

Classification Procedure and the Single-Coder Limitation

Each of the 100 vision and 100 mission statements was classified by the author into one of 81 neurosemantic configurations using the taxonomy described in Section 2. Classification proceeded in two steps: (1) identification of the dominant noun-prime (the word or phrase carrying the primary semantic load); and (2) assignment of the need-domain and affective valence most strongly activated by that noun-prime. The procedure is interpretive, not algorithmic.

This procedure was performed by a single coder. Single-coder classification is the most significant methodological limitation of this study. It introduces unknown reliability variance into the CSDI values: different trained coders may reach different class assignments in ambiguous cases, producing different CSDI scores and potentially different correlation estimates. The specific magnitude of the observed r should therefore not be interpreted as a stable parameter estimate. Three features of the design mitigate, but do not eliminate, this limitation: (1) all 200 classifications are reproduced in Appendix

A, enabling any reader to challenge, revise, and recompute; (2) the robustness programme in Section 6b characterizes directional stability under classification noise; and (3) the paper is positioned as an instrument calibration exercise, with formal inter-rater reliability testing specified as Priority 1 in Section 18.

Dataset 2: Stock Performance Panel

The performance dataset comprises matched financial metrics for all 100 corporations, including Total Return, Benchmark Return (sector index return), Excess Return (Total Return minus Benchmark Return), Volatility, and Sharpe Ratio (reproduced in Appendix B). Sharpe Ratio values in the source data are anomalously large for several entries, suggesting data processing artifacts; Sharpe Ratio was excluded as a dependent variable. Excess Return is the primary dependent variable. Historical stock price data were retrieved from Yahoo Finance (finance.yahoo.com) for the period 01/01/2022 to 31/12/2024. The analytic sample is $n = 65$; 35 companies were excluded due to missing Excess Return values.

Table 1: Summary statistics for the analytic sample ($n = 65$)

Metric	Value	Notes
Analytic sample (N)	65	Companies with valid Excess Return
Mean CSDI	0.395	Std Dev = 0.453; range 0.022–1.000
Mean Excess Return	−0.167	Period includes post-pandemic normalization
Std Dev (Excess Return)	0.393	High dispersion; heterogeneous macro conditions
Excess Return range	−0.970 to +0.707	Full performance distribution represented

What This Design Can and Cannot Test

The cross-sectional design tests the synchronic association between CSDI scores and excess returns. It does not test any diachronic claim about meaning accumulation over time, causal direction, or dynamic changes in semantic alignment. Sector-level analyses are conducted on sub-samples of $n = 6$ to $n = 15$. At these sizes, within-sector r values are directional indicators, not inferential statistics. Confirmation of H2 requires the $n \geq 300$ sector-stratified design with interaction testing specified in Section 18.

Results

Primary Analysis (H1)

Table 2 reports the primary bivariate regression of Excess Return on CSDI for the full analytic sample ($n = 65$).

Table 2: Primary regression: CSDI predicting Excess Return ($n = 65$). OLS β 95% CI reported

Statistic	Value	Interpretation
Pearson r (CSDI vs. Excess Return)	+0.370	Positive; consistent with H1
R-squared	0.137	13.7% of excess return variance explained
p-value	0.002	Significant at $\alpha = 0.01$; $df = 63$
t-statistic	3.164	Two-tailed
OLS β	+0.320	95% CI: [0.122, 0.518]; SE = 0.101
Effect size	Small-Moderate	$ r = 0.370$; Cohen (1988) moderate threshold = 0.30

The result is positive, statistically significant, and in the predicted direction, consistent with H1. We characterize this as a plausibility indicator: the data do not falsify H1 in the pilot. The 13.7% explained variance exceeds single-variable benchmarks for comparable text-based predictors: annual report readability accounts for approximately 2–5% of return variance, and CEO letter sentiment for 3–7%. Three causal interpretations remain equally consistent with the design: direct symbolic resonance (H1), communication competence mediation (H1c), and reverse causation. These are distinguished by the longitudinal design specified in Section 18 [15].

Robustness Analyses

The robustness programme is a novel contribution of this study: it is the first systematic analysis of CSDI score sensitivity to single-coder classification variance.

The first robustness test identifies the ten most classification-ambiguous cases (where two or more neurosemantic configurations could reasonably be assigned by a trained coder), reclassifies all ten simultaneously using the most plausible alternative classification, and recomputes the primary correlation. Ambiguous cases were identified based on two criteria: (a) the dominant noun-prime activates two proximate need-domains with comparable intensity, and (b) the affective valence is contested between Positive and Neutral registers.

Table 3: Ten most ambiguous classification cases with alternative codes used in robustness Test 1

Company	Original V/M	Alternative V/M	Reason for Ambiguity
Ford Motor Company	34 / 31	22 / 22	Safety-Neu vision could be Sociality-Pos
General Motors	34 / 41	34 / 34	Self-Act-Pos mission has Safety-Pos resonance
Mondelez International	22 / 41	22 / 22	Self-Act-Pos mission could be Sociality-Pos
Target Corporation	22 / 41	22 / 22	'Preferred destination' vs. Sociality-Pos
Tyson Foods	34 / 41	34 / 34	'Raise expectations' vs. 'trusted/sustainable'
Sysco Corporation	22 / 12	22 / 22	Survival-Neu vs. Sociality-Pos mission
UnitedHealth Group	22 / 34	22 / 22	Safety-Pos vs. Sociality-Pos mission
Visa Inc.	67 / 22	41 / 22	Self-Act-Pos vision code intensity contested
CVS Health	34 / 67	34 / 41	Mission Self-Act-Pos code intensity contested
Walt Disney Company	67 / 22	41 / 22	Vision Self-Act-Pos superlative intensity

Using the alternative classifications simultaneously, $r = +0.301$ ($p = 0.012$), a reduction of 0.069 from the original estimate but remaining positive and significant. This result indicates that even the most conservative plausible reclassification of all ambiguous cases does not reverse the directional finding.

The second robustness test is a Monte Carlo simulation: 10,000 independent trials in which 10% of the corpus (approximately 6–7 randomly selected companies) is subjected to random class-code

perturbation of ± 1 to ± 3 steps, with the CSDI recomputed and the correlation re-estimated in each trial.

Table 4: Monte Carlo robustness results: 10,000 trials, random 10% perturbation of class codes (n = 65)

Statistic	Value	Interpretation
Mean r across 10,000 trials	0.357	Stable positive signal across perturbations
SD of r across trials	0.042	Low variance; consistent signal
95% confidence interval for r	[0.274, 0.438]	CI lower bound well above zero
% trials with $r > 0$	100.0%	Direction is invariant to perturbation
% trials significant at $p < .05$	99.6%	Statistical significance highly robust

Quadratic Non-Linearity Test

The ceiling effect hypothesis predicts a negative quadratic CSDI term in the regression model. Regressing residuals from the primary linear model on CSDI² produces $r(\text{CSDI}^2 \text{ vs. residuals}) = +0.008$ ($t = 0.060$, $p = .952$). There is no evidence of a non-linear CSDI–performance relationship in the current sample. The ceiling effect hypothesis is not supported by the pilot data and is carried forward as a confirmatory proposition (Section 18, Priority 4).

Results summary: $r = +0.370$ ($p = 0.002$, $R^2 = 13.7\%$). Conservative reclassification of all ten ambiguous cases: $r = +0.301$ ($p = 0.012$). Monte Carlo over 10,000 perturbation trials: 100% positive, 99.6% significant, 95% CI [0.274, 0.438]. No quadratic non-linearity ($p = .952$). The directional finding is robust; the point estimate is an exploratory observation, not a stable parameter.

Formula Superiority (H3)

Table 5: Formula comparison: CSDI versus raw absolute difference. Excess Return is the dependent variable (n = 65)

Model	Pearson r	R-squared	p-value
CSDI: inverse-difference	+0.370	0.137	0.002 (significant)
RAD: raw absolute difference	−0.228	0.052	0.067 (not significant)

The RAD model yields $r = -0.228$ ($p = 0.067$, non-significant), not only weaker than the CSDI result but pointing in the theoretically incorrect direction. This inversion is a predictable artifact of the linear penalty structure: raw absolute difference applies equal per-unit penalties regardless of distance magnitude, misrepresenting the non-linear relationship between symbolic distance and semantic resonance. The ΔR^2 advantage of CSDI over RAD ($0.137 - 0.052 = +0.085$) supports H3.

Sector-Level Directional Patterns

Within-sector correlation coefficients are reported as directional, descriptive indicators, not as inferential statistics. Sector sub-samples of $n = 6$ to $n = 15$ are insufficient for inferential testing.

Table 6: Within-sector directional patterns. Within-sector r values are descriptive, not inferential

Sector	N	Avg CSDI	Avg Excess Ret.	Within-sector r	Theoretical Prediction
Healthcare	6	0.361	+0.059	+0.651	Strong positive (Narrative-Dep.), consistent
Comm. Services	6	0.683	−0.309	+0.553	Moderate positive, consistent
Technology	6	0.381	−0.313	+0.531	Moderate positive, consistent
Consumer Disc.	15	0.325	−0.158	+0.445	Strong positive (Narrative-Dep.), consistent
Financials	6	0.529	+0.037	+0.431	Weak (H1c candidate), ambiguous
Industrials	8	0.286	−0.238	+0.406	Weak/absent (Ops-Dep.), partially inconsistent
Consumer Staples	14	0.399	−0.207	+0.130	Moderate; attenuated by H1b shocks, consistent

Six of seven sectors show associations in the predicted direction. Healthcare ($r = +0.651$) and Consumer Discretionary ($r = +0.445$) show the strongest within-sector patterns, consistent with their Narrative-Dependent classification. Consumer Staples’ attenuated r (+0.130) is explicable under H1b: seven of fourteen Consumer Staples observations are severe underperformers driven by identifiable exogenous shocks (Estée Lauder Excess Return: −0.970; Kraft Heinz: −0.446; General Mills: −0.571). The Industrials within-sector r (+0.406) is higher than the operations-Dependent prediction, possibly reflecting the presence of defense and aerospace companies in the sub-sample with stronger narrative-legitimacy dynamics.

Case Illustrations

Three cases illustrate how the theoretical mechanism operates at the firm level. They are offered as instrument demonstrations, not as evidence.

Signaling Coherence

Johnson & Johnson’s vision (‘For every person to use our products to live longer, healthier, happier lives’) and mission (‘To blend heart, science, and ingenuity to profoundly change the trajectory of health for humanity’) are both classified as Sociality-Positive. CSDI = 1.000. Excess Return = +0.365, substantially above the Healthcare sector average (+0.059). Under signaling theory, J&J’s perfect symbolic alignment constitutes a credible signal of identity coherence in a sector where patient trust and relational legitimacy are primary value drivers. The case is consistent with H1 in the predicted strongest-effect sector.

Low Alignment, Positive Performance: Visa Inc

Visa’s vision is classified as Self-Actualization-Positive; its mission as Sociality-Positive. CSDI = 0.022, among the lowest in the sample, yet Excess Return = +0.030. This case is the strongest single-firm evidence for H1c: Visa’s investor communication operates across earnings calls, analyst briefings, and product narratives with consistent strategic coherence that the vision–mission dyad alone does not capture. Under H1c, the CSDI functions as a proxy for broader communicative competence; the mechanism operates through the full communicative ecology.

Macro-Shock Override: Nike Inc

Nike’s vision and mission are both Self-Actualization-Positive, yielding CSDI = 1.000. Yet Excess Return = −0.875, the worst sector underperformance in Consumer Discretionary. Nike’s collapse during the measurement period was attributable to inventory overhang, channel mix deterioration, and competitive market share loss, operative forces entirely independent of symbolic architecture. This case directly illustrates H1b: when proximal operative forces dominate performance determination, the semantic resonance signal is suppressed regardless of its strength.

**Positioning in the Existing Literature
Organizational Identity and Corporate Narrative**

The organizational identity literature establishes that organizational identity is expressed through the language with which organizations characterize themselves, their ‘central, distinctive, and enduring’ characteristics [16-18]. The present paper extends this tradition by operationalizing identity expression at the level of neurosemantic configurations, providing a more granular and psychologically grounded unit of analysis, and by testing whether within-statement alignment, rather than the content of any single identity claim, carries performance-relevant information. The CEO narrative literature demonstrates that narrative coherence affects organizational outcomes; the CSDI operates at the symbolic rather than propositional level, measuring cognitive-affective compatibility rather than causal narrative structure [19,20].

Textual Analysis and CEO Communication

A growing literature uses computational and interpretive text analysis to extract performance-relevant signals from corporate communications: negative affect in business press; annual report readability predicting earnings persistence; finance-specific sentiment lexica; investor communication clarity and institutional participation [14,15,21,22]. The CSDI occupies a distinct position: it is a semantic alignment measure, capturing the structural relationship between two classified symbolic orientations rather than the valence or complexity of any single text. Future work should test the CSDI’s incremental validity against sentiment and readability controls.

Content Analysis in Strategy Research

The present study uses a classification-based content analysis procedure with a long tradition in strategy research. The methodological standards are demanding: inter-rater reliability testing with $\kappa \geq 0.70$ is the normal expectation [23-25]. Single-coder studies are accepted at the pilot or exploratory stage when the classification scheme is novel and the paper is explicitly positioned as instrument construction, conditions the present paper meets. All classifications are reproduced for replication challenge; the robustness programme characterizes classification sensitivity.

The Sectoral Moderation Matrix

The Sectoral Moderation Matrix is a theoretical specification, not a data description. It positions sectors on a Narrative–Operations Dependence continuum and predicts when the CSDI–performance relationship will be strong, moderate, or absent, based on the differential applicability of the signaling, legitimacy, and cognitive consistency mechanisms.

Table 7: Sectoral Moderation Matrix: theoretical classification, operative mechanism, prediction, and pilot indicator. * Industrials anomaly discussed in Section 8

Sector	Classification	Operative Mechanism	Expected CSDI Effect	Pilot r
Healthcare	Narrative-Dependent	Patient trust (legitimacy); safety signal credibility (signaling)	Strong positive	+0.651
Consumer Disc.	Narrative-Dependent	Brand identity legitimacy; lifestyle aspiration signal	Strong positive	+0.445
Consumer Staples	Narrative-Dependent	Brand trust; H1b suppression operative	Moderate (H1b sensitive)	+0.130
Comm. Services	Mixed/leans Narrative	Subscriber narrative + infrastructure	Moderate positive	+0.553
Technology	Mixed	Innovation signal + ecosystem legitimacy	Moderate positive	+0.531
Financials	Mixed (H1c dominant)	Capital stewardship; H1c mediation likely dominant	Weak; H1c mediation expected	+0.431
Industrials	Operations-Dependent	Physical output; logistics efficiency dominates	Weak or absent	+0.406*

Practical Application: The Four-Step Diagnostic

The framework generates four interpretive instruments for organizational self-assessment. These are structured reflection tools, not performance prescriptions.

Step 1: Semantic Mapping

Identify the dominant noun-prime in your vision and mission statement separately. For each, ask: what fundamental human need does this expression primarily address? With what affective register: attainment (positive), maintenance (neutral), or avoidance (negative)? Disagreement among leadership team members about classification is itself diagnostically valuable.

Step 2: Umbra Cone Construction

Identify the need-domains your statements do not address. Interpret through the lens of the Sectoral Moderation Matrix: which shadowed domains are most consequential for your sector’s stakeholders? A Healthcare organization whose statements cast an umbra cone over the Safety domain may be communicating a gap precisely where stakeholder confidence is most need-sensitive.

Step 3: CSDI Computation and Sector Benchmarking

Compute CSDI using the formula in Section 4. Interpret relative to sector benchmarks in Table 6, treating pilot estimates as indicative. Avoid maximizing CSDI as a target: the quadratic test in Section 6c finds no evidence for an inverted-U effect in the current sample.

Step 4: Strategic Reengineering

Where semantic misalignment is identified, revise one or both statements to reduce symbolic distance, guided by the sector’s operative mechanism. Strategic reengineering that extends to the full ecology of organizational communication (earnings calls, CEO letters, investor relations materials) is more likely to produce performance-relevant outcomes than isolated document revision, consistent with H1c’s prediction.

Discussion

What the Pilot Establishes and What It Does Not

The pilot results establish five things: (1) $r = +0.370$ ($p = 0.002$) provides positive, significant, directional support for H1; (2) the direction is robust to classification noise across both targeted reclassification and Monte Carlo perturbation; (3) the CSDI formula produces a theoretically coherent result where the RAD comparator does not, supporting H3; (4) sector-level directional patterns are broadly consistent with the Sectoral Moderation Matrix across six of seven sectors; and (5) firm-level case evidence illustrates H1b's override condition in multiple sectors.

The pilot results do not establish: (1) causation; (2) a stable parameter estimate for r ; (3) inferential sector-level correlations; (4) the non-linear ceiling effect hypothesis; or (5) generalizability beyond US large-cap corporations in this measurement period.

The Communication Competence Confound

H1c is the most consequential theoretical challenge to the direct mechanism interpretation. Financials achieve the highest average excess return (+0.037 versus full-sample mean of -0.167) despite a moderate average CSDI (0.529). Multiple Financials outperformers (Goldman Sachs, Morgan Stanley, JPMorgan Chase, American Express) are recognized for investor communication of exceptional sophistication. Under H1c, these firms' performance reflects a latent communicative competence that the CSDI captures only partially. It bears emphasis that H1c is not a refutation of Learnable Theory: if the CSDI functions as a proxy for broader organizational symbolic intelligence, it is functioning as the theory predicts.

The Signaling–Legitimacy–Consistency Integration

The integration of Learnable Theory with signaling theory, legitimacy theory, and cognitive consistency theory strengthens the theoretical framework in three ways. First, it grounds the proposed mechanism in established traditions with strong empirical track records. Second, it generates additional testable predictions: if the mechanism operates through signaling, credibility-enhancing attributes (analyst coverage, governance quality) should moderate the CSDI–performance relationship; if through legitimacy, stakeholder composition and institutional context should moderate it; if through cognitive consistency, investor cognitive load and information processing conditions should moderate it. Third, the integration specifies where Learnable Theory adds value beyond existing theories: the neurosemantic taxonomy provides a principled classification system for characterizing the cognitive-affective content of organizational communications, which all three traditions require but none supplies.

Discussion summary: The pilot supports H1's direction robustly. H1c remains an open mechanistic alternative, not a theoretical contradiction. The signaling–legitimacy–consistency integration strengthens theoretical grounding and generates additional testable predictions. Causation remains undetermined; the confirmation agenda specifies what is required.

Toward a Probabilistic Theory of Strategic Language

The contribution of this paper to organization theory is the proposition that organizational language can be modeled probabilistically: not deterministically, not metaphorically, but as a symbolic variable with measurable properties that associate with outcomes in predictable, boundary-conditioned ways. The CSDI is a first instrument in this programme. The conditional specification, through the Sectoral Moderation Matrix, H1b, and H1c, transforms the theory from an unconditional claim into a conditional programme that specifies its own failure conditions, making it

scientifically more productive. The mechanism account is multi-layered: the micro-level psychological mechanism (cognitive consistency) operates within a meso-level organizational signaling process, which is embedded in a macro-level legitimacy dynamic [1-2]. Each level generates distinct moderator predictions and distinct mediation tests, providing a rich empirical programme for future work.

Neurosemantic Leadership: The Symbolic Architect

The concept of Generative Leadership of Meanings holds that effective leaders are symbolic architects: individuals who shape the meaning-making environment through deliberate choices about language, narrative, and symbolic orientation [6]. The integrated theoretical framework adds precision: in Narrative-Dependent sectors, symbolic architecture functions through the three mechanisms identified in Section 2, making it a consequential performance-relevant capability. The H1c interpretation extends the symbolic architect role: if the CSDI's performance relevance operates through broader organizational communication competence, then the symbolic architect is a meaning-ecology designer: someone who manages the coherence of organizational symbolic output across all channels as deliberately as financial output.

Ethical Considerations

Two ethical concerns follow directly from the framework. First, symbolic manipulation: if CSDI scores associate with performance, organizations may engineer high-CSDI statement pairs as optimization tactics without corresponding authentic commitment. The theoretical framework provides its own safeguard: under signaling theory, manipulation is deterred when signals are costly to fake; organizations whose identity is genuinely fragmented cannot costlessly maintain symbolic alignment across the full ecology of stakeholder communication. The incoherence will eventually manifest in the domains that the vision–mission alignment shadows.

Second, AI-mediated application of the neurosemantic taxonomy: the 81-class matrix is derived from interpretive judgments about culturally loaded linguistic associations. Applied in AI classification systems without adequate cultural and contextual calibration, it risks encoding cultural biases, misclassifying non-English-language communications, and simulating affective attunement without genuine understanding of stakeholder need-domains. Learnable Theory's own normative commitments (transparency, cultural sensitivity, human-centered design) apply fully to any automated deployment of the CSDI framework. Semantic audit trails, bias detection protocols, and cross-cultural validation procedures are prerequisites for responsible AI application.

Confirmatory Research Agenda

This section specifies five minimum requirements for the confirmatory programme, organized in order of methodological urgency.

Priority 1: Inter-Rater Reliability Testing

A formal inter-rater reliability study is the most urgent requirement. A trained second coder should independently classify a minimum 30% sub-sample (approximately 60 statement pairs from Appendix A) blind to the author's classifications. Cohen's κ should be computed and reported, with a target of $\kappa \geq 0.70$, consistent with acceptable reliability in interpretive content analysis [25,26].

Priority 2: $n \geq 300$ Longitudinal Panel Design

A minimum sample of $n = 300$ companies, distributed across

at least 10 sectors and three market-regime periods (expansion, contraction, recovery), is required for the full theoretical model. A panel design with a minimum of five annual observations per company enables cross-lagged panel modelling to test causal direction [27].

Priority 3: H1c Mediation Test

Testing the Communication Competence Alternative requires multi-channel linguistic data, including earnings call consistency scores, annual report readability indices, analyst guidance precision metrics, and CEO letter sentiment consistency. Structural equation modelling or mediation analysis provides the appropriate analytic framework [15,28].

Priority 4: Quadratic Non-Linearity Retest

The ceiling effect hypothesis, though not supported in the current sample ($p = .952$), should be retested at $n \geq 300$ where sufficient power exists to detect small non-linear effects. The Communication Services sector merits a dedicated sector-level quadratic test once adequate sector n is achieved.

Priority 5: Cross-Cultural Extension

Cross-cultural extension applying universal semantic primes to classify statements in European and Asian institutional contexts would test the generalizability of both the taxonomy and the CSDI–performance relationship [29,30]. The cross-cultural validity of the taxonomy’s affective valence dimension is particularly uncertain.

Synthesis of Contributions

This paper makes five distinguishable contributions to the organizational theory and strategic communication literatures. (1) Theoretical integration: by grounding Learnable Theory’s claims in signaling theory, legitimacy theory, and cognitive consistency theory, the paper provides a multi-level mechanism account with distinct moderator predictions. (2) Construct formalization: six constructs (learnables, learnable fields, symbolic attractors, umbra cones, neurosemantic configurations, and semantic resonance) are formalized with operational definitions tied directly to measurement. (3) Instrument design and robustness: the CSDI is introduced as a formally defined, non-linear, bounded instrument; its formula superiority over the RAD comparator is demonstrated empirically; the Monte Carlo robustness programme (10,000 trials) provides the first systematic analysis of CSDI score sensitivity to single-coder classification variance. (4) Pilot plausibility evidence: $n = 65$ observations yield $r = +0.370$ ($R^2 = 13.7\%$, $p = 0.002$), with sector-level directional patterns broadly consistent with the Sectoral Moderation Matrix. (5) Literature positioning: the paper explicitly engages the organizational identity, textual analysis, and content analysis methodology literatures, identifying what the CSDI adds to each [31–34].

Conclusion

The central proposition of this paper is that the semantic coherence of corporate vision and mission statements, measured as the symbolic distance between the cognitive-affective orientations their dominant expressions activate, is a probabilistic predictor of excess stock returns, operating through the mechanism of semantic resonance. This mechanism is grounded in signaling theory, legitimacy theory, and cognitive consistency theory, each contributing a distinct layer of the causal account.

The pilot evidence is consistent with this proposition. The CSDI–excess return association ($r = +0.370$, $p = 0.002$) survives a comprehensive robustness programme: conservative reclassification of all ten most ambiguous cases yields $r = +0.301$ ($p = 0.012$); 10,000 Monte Carlo perturbation trials produce a 95% confidence interval of [0.274, 0.438] with 100% of trials positive. The directional finding is robust to classification noise at a level sufficient to justify the confirmatory research investment the programme requires.

The paper’s honest claim is this: organizational language is not merely a medium for communicating strategic information. It is a symbolic system that activates cognitive-affective orientations in its audiences, and the coherence of that system, as partially captured by the alignment between vision and mission, is information that markets respond to, at least probabilistically, in sectors where symbolic-narrative signals mediate stakeholder value. Making that claim empirically tractable, through a formally defined instrument and a rigorous robustness programme, is the long-term programme of which this paper is a first systematic step.

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Appendix A: Vision and Mission Corpus: Full Text, Single-Coder Classifications, and CSDI Scores

All 100 vision and mission statements with single-coder neurosemantic classifications and CSDI scores are reproduced below. Classifications reflect the author's interpretive judgments of dominant noun-prime and affective valence. Companies marked * are excluded from correlation analyses (missing Excess Return data). Companies marked † are identified as ambiguous classification cases used in robustness Test 1 (Table 3). All statements sourced from publicly available corporate communications.

#	Company	Sector	Vision Statement	Mission Statement	V-Class	M-Class	V-Code	M-Code	CSDI
1	Boeing Company	Industrials	To be the best aerospace company in the world and among the premier industrial firms.	To connect, protect, explore and inspire the world through aerospace innovation.	Self-Act-Pos	Sociality-Pos	67	31	0.028
2	Lockheed Martin	Industrials	To be the world's premier defense and aerospace company.	To solve complex challenges, advance scientific discovery and deliver innovative solutions to help our customers keep people safe.	Self-Act-Pos	Safety-Pos	67	34	0.030
3	Raytheon Technologies	Industrials	To define the future of aerospace and defense.	To push the boundaries of known science and technology to solve our customers' greatest challenges.	Self-Act-Pos	Self-Act-Pos	67	67	1.000
4	Northrop Grumman	Industrials	To be the most trusted provider of systems and technologies that ensure security of our nation and allies.	To solve the toughest problems in space, aeronautics, defense and cyberspace through pioneering science and technology.	Safety-Pos	Safety-Pos	34	34	1.000
5	Nike, Inc.	Consumer Disc.	To bring inspiration and innovation to every athlete in the world.	To do everything possible to expand human potential through inspiring athletic innovation.	Self-Act-Pos	Self-Act-Pos	41	41	1.000
6	Gap Inc. *	Consumer Disc.	To be a great specialty retailer.	To create emotional connections with customers around the world through inspiring product and experience.	Self-Act-Pos	Sociality-Pos	67	22	0.022
7	Ford Motor Company†	Consumer Disc.	To become the world's most trusted company, designing smart vehicles for a smart world.	To help build a better world, where every person is free to move and pursue their dreams.	Safety-Neu	Sociality-Pos	34	31	0.250
8	General Motors†	Consumer Disc.	To create a world with zero crashes, zero emissions, and zero congestion.	To earn customers for life by building brands that inspire passion and loyalty.	Safety-Neg	Self-Act-Pos	34	41	0.125
9	Tesla, Inc.	Automotive/ Energy	To create the most compelling car company of the 21st century by driving the world's transition to electric vehicles.	To accelerate the world's transition to sustainable energy.	Self-Act-Pos	Safety-Pos	67	34	0.029
10	Dow Inc.	Materials	To be the most innovative, customer-centric, inclusive and sustainable materials science company.	To deliver a sustainable future for the world through our materials science expertise and collaboration.	Self-Act-Pos	Safety-Pos	41	34	0.125

11	DuPont de Nemours	Materials	To be the world's most dynamic science and innovation company.	To empower the world with essential innovations that enable customers to thrive and improve everyday life.	Self-Act-Pos	Self-Act-Pos	41	41	1.000
12	General Electric	Industrials	To build, move, power and cure the world.	To rise to the challenge of building a world that works through innovative industrial solutions.	Sociality-Pos	Safety-Pos	22	34	0.077
13	3M Company	Industrials	To be a growth company that invests in a meaningful way to improve every company and every life.	To apply science in collaborative ways to improve lives daily through innovative products.	Self-Act-Pos	Sociality-Pos	41	31	0.091
14	Berkshire Hathaway	Financials	To own and operate businesses that generate sustainable earnings and cash flows.	To provide superior returns to shareholders through disciplined capital allocation and operational excellence.	Survival-Neu	Survival-Neu	12	12	1.000
15	Honeywell International	Industrials	To be a premier global technology leader.	To invent and manufacture technologies to address tough challenges linked to global macro trends.	Self-Act-Pos	Safety-Pos	67	34	0.030
16	Procter & Gamble	Consumer Staples	To be recognized as the best consumer products and services company in the world.	To provide branded products of superior quality that improve the lives of the world's consumers.	Self-Act-Pos	Self-Act-Pos	67	41	0.038
17	Estée Lauder	Consumer Staples	To be the most innovative beauty company.	To bring the best to everyone we touch and be the best in everything we do.	Self-Act-Pos	Self-Act-Pos	41	41	1.000
18	L'Oréal USA	Consumer Staples	To offer all women and men worldwide the best of cosmetics innovation.	To create beauty that moves the world by providing innovative, ethical and sustainable beauty products.	Self-Act-Pos	Safety-Pos	41	34	0.125
19	Colgate-Palmolive	Consumer Staples	To reimagine a healthier future for all people, their pets and our planet.	To deliver products that make lives healthier and more enjoyable while respecting people and planet.	Safety-Pos	Safety-Pos	34	34	1.000
20	Kimberly-Clark	Consumer Staples	To lead the world in essentials for a better life.	To deliver better care for billions of people around the world through innovative personal care products.	Self-Act-Pos	Sociality-Pos	41	31	0.091
21	Philip Morris Int'l	Consumer Staples	To deliver a smoke-free future.	To replace cigarettes with smoke-free products as fast as possible for the benefit of adult smokers.	Safety-Pos	Safety-Pos	34	34	1.000

22	Altria Group	Consumer Staples	To responsibly lead the transition of adult smokers to a smoke-free future.	To own and develop financially disciplined businesses that are leaders in harm reduction.	Safety-Pos	Safety-Pos	34	34	1.000
23	Amazon.com, Inc.	Consumer Disc.	To be Earth's most customer-centric company; to build a place where people can find and discover anything they might want to buy online.	To be Earth's most customer-centric company, Earth's best employer, and Earth's safest place to work.	Sociality-Pos	Sociality-Pos	22	22	1.000
24	Chevron Corporation	Energy	To be the global energy company most admired for its people, partnership and performance.	To provide energy products vital to sustainable economic progress and human development.	Sociality-Pos	Safety-Pos	22	34	0.077
25	ExxonMobil	Energy	To be the world's premier petroleum and petrochemical company.	To provide energy that supports human progress while advancing innovations that address climate change.	Self-Act-Pos	Safety-Pos	67	34	0.030
26	ConocoPhillips	Energy	To safely deliver energy to the world.	To explore for, develop and produce crude oil and natural gas globally while generating competitive returns.	Safety-Pos	Survival-Neu	34	12	0.045
27	Duke Energy	Utilities	To become the best energy company in America.	To provide clean, affordable and reliable energy that powers the lives of our customers and communities.	Self-Act-Pos	Safety-Pos	67	34	0.030
28	NextEra Energy	Utilities	To be recognized as America's premier clean energy company.	To generate clean energy and deliver value to customers and communities through excellence and innovation.	Self-Act-Pos	Safety-Pos	67	34	0.030
29	JPMorgan Chase	Financials	To be the most respected financial services firm in the world.	To help clients succeed by providing financial services that create value.	Sociality-Pos	Safety-Pos	22	34	0.077
30	Visa Inc.†	Financials	To be the best way to pay and be paid, for everyone, everywhere.	To connect the world through the most innovative, reliable, and secure payment network.	Self-Act-Pos	Sociality-Pos	67	22	0.022
31	Bank of America	Financials	To help make financial lives better through the power of every connection.	To deliver for our clients, teammates, communities and shareholders every day.	Sociality-Pos	Sociality-Pos	22	22	1.000
32	American Express	Financials	To provide the world's best customer experience every day.	To become essential to our customers by providing differentiated products and services.	Sociality-Pos	Self-Act-Pos	22	41	0.053

33	Goldman Sachs	Financials	To be the leading global financial services firm.	To advance sustainable economic growth and financial opportunity through expert insights.	Self-Act-Pos	Safety-Pos	67	34	0.030
34	Morgan Stanley	Financials	To become the world's best investment firm.	To mobilize capital to help governments, corporations and individuals achieve their financial goals.	Self-Act-Pos	Safety-Pos	67	34	0.030
35	Wells Fargo	Financials	To satisfy our customers' financial needs and help them succeed financially.	To build strong relationships with customers while delivering quality products and services.	Sociality-Pos	Sociality-Pos	22	22	1.000
36	Citigroup Inc.	Financials	To be the most respected global financial services company.	To serve as a trusted partner to our clients by responsibly providing financial services.	Sociality-Pos	Sociality-Pos	22	22	1.000
37	BlackRock Inc.	Financials	To help more and more people experience financial well-being.	To help investors build better financial futures through investment management and technology.	Sociality-Pos	Safety-Pos	22	34	0.077
38	Mastercard Inc.	Financials	To build a world beyond cash.	To connect and power an inclusive digital economy that benefits everyone, everywhere.	Safety-Pos	Sociality-Pos	34	22	0.077
39	PayPal Holdings	Financials	To democratize financial services and empower people and businesses to join and thrive.	To enable consumers and merchants to send and receive digital payments globally with ease and security.	Self-Act-Pos	Safety-Pos	41	34	0.125
40	Archer Daniels Midland	Consumer Staples	To unlock the power of nature to enrich the quality of life.	To connect crops and markets to help feed the world and support sustainable agricultural practices.	Self-Act-Pos	Sociality-Pos	41	22	0.053
41	The Coca-Cola Company	Consumer Staples	To craft the brands and choice of drinks that people love, to refresh them in body and spirit.	To refresh the world in mind, body, and spirit; to inspire moments of optimism and happiness.	Sociality-Pos	Sociality-Pos	22	22	1.000
42	Starbucks Corporation	Consumer Staples	To establish Starbucks as the premier purveyor of the finest coffee in the world.	To inspire and nurture the human spirit — one person, one cup, and one neighborhood at a time.	Self-Act-Pos	Sociality-Pos	67	22	0.022
43	PepsiCo, Inc.	Consumer Staples	To be the global leader in convenient foods and beverages by winning with purpose.	To create more smiles with every sip and every bite.	Self-Act-Pos	Sociality-Pos	67	22	0.022
44	McDonald's Corporation	Consumer Disc.	To move with velocity to drive profitable growth and become an even better McDonald's serving more customers delicious food each day.	To make delicious feel-good moments easy for everyone.	Self-Act-Pos	Sociality-Pos	41	31	0.091

45	Mondelez International†	Consumer Disc.	To create more moments of joy through global snacking brands.	To empower people to snack right by offering the right snack, for the right moment, made the right way.	Sociality-Pos	Self-Act-Pos	22	41	0.053
46	Kraft Heinz Company	Consumer Staples	To be the best food company, growing a better world.	To sustainably grow by delighting consumers with great taste and nutrition while doing good for people.	Self-Act-Pos	Safety-Pos	67	34	0.030
47	General Mills	Consumer Staples	To make food the world loves.	To serve the world by making food people love through innovation, quality products and responsible practices.	Sociality-Pos	Sociality-Pos	22	22	1.000
48	Kellogg Company *	Consumer Staples	To enrich and delight the world through foods and brands that matter.	To nourish families so they can flourish and thrive through trusted food brands.	Sociality-Pos	Sociality-Pos	22	22	1.000
49	Tyson Foods†	Consumer Staples	To be the most trusted and sustainable protein company.	To raise the world's expectations for how much good food can do by producing quality protein products.	Safety-Pos	Self-Act-Pos	34	41	0.125
50	Sysco Corporation†	Consumer Staples	To be our customers' most valued and trusted business partner.	To market and distribute food products to restaurants, healthcare and educational facilities with excellence.	Sociality-Pos	Survival-Neu	22	12	0.091
51	Johnson & Johnson	Healthcare	For every person to use our products to live longer, healthier, happier lives.	To blend heart, science, and ingenuity to profoundly change the trajectory of health for humanity.	Sociality-Pos	Sociality-Pos	22	22	1.000
52	Merck & Co.	Healthcare	To be the premier research-intensive biopharmaceutical company.	To save and improve lives through innovative medicines, vaccines and animal health products.	Self-Act-Pos	Safety-Pos	67	34	0.030
53	Pfizer Inc.	Healthcare	To be the premier innovative biopharmaceutical company of the 21st century.	To apply science and global resources to bring therapies that extend and improve lives.	Self-Act-Pos	Safety-Pos	67	34	0.030
54	AbbVie Inc.	Healthcare	To have a remarkable impact on people's lives through the delivery of innovative medicines.	To discover and deliver innovative medicines that solve serious health issues today and tomorrow.	Sociality-Pos	Sociality-Pos	22	22	1.000
55	Eli Lilly and Company	Healthcare	To make life better for people around the world.	To discover, develop, and deliver best-in-class pharmaceutical products that matter for people.	Sociality-Pos	Sociality-Pos	22	22	1.000

56	UnitedHealth Group†	Healthcare	To help people live healthier lives and help make the health system work better for everyone.	To improve access, affordability, outcomes and experiences with innovative solutions and partnerships.	Sociality-Pos	Safety-Pos	22	34	0.077
57	CVS Health†	Healthcare	To help people on their path to better health.	To be the most consumer-centric health company by providing integrated, innovative health solutions.	Safety-Pos	Self-Act-Pos	34	67	0.030
58	Walgreens Boots Alliance *	Healthcare	To be the first choice in health and wellbeing for everyone in America.	To help people across the world lead healthier and happier lives through accessible pharmacy services.	Safety-Pos	Safety-Pos	34	34	1.000
59	Caterpillar Inc.	Industrials	To be the global leader in customer value.	To enable economic growth through infrastructure and energy development with sustainable solutions.	Sociality-Pos	Safety-Pos	22	34	0.077
60	Deere & Company	Industrials	To double the value we create for our stakeholders.	To provide innovative products and services for those linked to the land while achieving superior returns.	Self-Act-Pos	Self-Act-Pos	41	41	1.000
61	Netflix, Inc.	Comm. Services	To entertain the world.	To provide on-demand entertainment that brings joy to people everywhere.	Sociality-Pos	Sociality-Pos	22	22	1.000
62	Walt Disney Company†	Comm. Services	To be one of the world's leading producers and providers of entertainment and information.	To entertain, inform and inspire people around the globe through the power of unparalleled storytelling.	Self-Act-Pos	Sociality-Pos	67	22	0.022
63	Walmart Inc.	Consumer Disc.	Everyone included.	To save people money so they can live better.	Sociality-Pos	Safety-Pos	22	34	0.077
64	Home Depot	Consumer Disc.	To be the preferred choice for home improvement solutions.	To provide the highest level of service, the broadest selection of products, and the most competitive prices.	Self-Act-Pos	Self-Act-Pos	67	41	0.038
65	Target Corporation†	Consumer Disc.	To help all families discover the joy of everyday life.	To make Target the preferred shopping destination by delivering outstanding value, innovation and experiences.	Sociality-Pos	Self-Act-Pos	22	41	0.053
66	Costco Wholesale	Consumer Disc.	To continually provide members with quality goods and services at the lowest possible prices.	To provide high-quality merchandise at prices consistently lower than elsewhere while rewarding stakeholders.	Self-Act-Pos	Self-Act-Pos	67	67	1.000

67	Lowe's Companies	Consumer Disc.	To be customers' first choice for home improvement.	To help people love where they live through innovative home improvement solutions.	Self-Act-Pos	Sociality-Pos	67	22	0.022
68	Best Buy Co.	Consumer Disc.	To enrich lives through technology.	To help customers discover and use technology that improves their lives through expert service.	Sociality-Pos	Self-Act-Pos	22	41	0.053
69	Macy's Inc.	Consumer Disc.	To be a trusted source that inspires and enables customers to express their personal style.	To provide quality products and exceptional shopping experiences that create value for customers.	Sociality-Pos	Self-Act-Pos	22	41	0.053
70	Ross Stores	Consumer Disc.	To offer competitive values to consumers through convenient retail locations.	To deliver great value on brand-name products for the entire family and home at everyday discounts.	Self-Act-Pos	Self-Act-Pos	67	67	1.000
71	TJX Companies	Consumer Disc.	To be a global, off-price retailer.	To deliver great value on ever-changing selections of brand name merchandise at prices below department stores.	Self-Act-Pos	Self-Act-Pos	67	67	1.000
72	AutoZone Inc.	Consumer Disc.	To be the best auto parts retailer in providing excellent customer service.	To provide customers with superior service and the right products at the right price every time.	Self-Act-Pos	Self-Act-Pos	67	67	1.000
73	O'Reilly Automotive	Consumer Disc.	To be the dominant distributor of automotive aftermarket parts.	To provide excellent customer service with quality parts at competitive prices in a clean environment.	Self-Act-Pos	Self-Act-Pos	67	67	1.000
74	CarMax Inc.	Consumer Disc.	To be the way car buying should be.	To drive integrity by being honest and transparent in every interaction with customers and employees.	Self-Act-Pos	Safety-Pos	41	34	0.125
75	Apple Inc.	Technology	To make the best products on earth and to leave the world better than we found it.	To bring the best user experience to customers through innovative hardware, software, and services.	Self-Act-Pos	Self-Act-Pos	67	41	0.038
76	Microsoft Corporation	Technology	To help people and businesses throughout the world realize their full potential.	To empower every person and every organization on the planet to achieve more.	Self-Act-Pos	Self-Act-Pos	41	41	1.000
77	Alphabet Inc.	Technology	To create a more sustainable, equitable, and inclusive world through innovation.	To organize the world's information and make it universally accessible and useful.	Safety-Pos	Sociality-Pos	34	22	0.077

78	Meta Platforms, Inc.	Comm. Services	To build the future of human connection and the technology that makes it possible.	To give people the power to build community and bring the world closer together.	Sociality-Pos	Sociality-Pos	22	22	1.000
79	Oracle Corporation	Technology	Focuses on innovation and possibilities through data.	To help people see data in new ways, discover insights, unlock endless possibilities.	Self-Act-Pos	Self-Act-Pos	41	41	1.000
80	Intel Corporation	Technology	To create world-changing technology that enriches the lives of every person on earth.	To shape the future of technology to create a better world for all.	Sociality-Pos	Safety-Pos	22	34	0.077
81	Cisco Systems, Inc.	Technology	To shape the future of the Internet by creating unprecedented value and opportunity.	To power an inclusive future for all.	Self-Act-Pos	Sociality-Pos	41	22	0.053
82	Adobe Inc.	Technology	To change the world through digital experiences.	To empower everyone to imagine, create, and bring any digital experience to life.	Sociality-Pos	Self-Act-Pos	22	41	0.053
83	Salesforce, Inc.	Technology	To be the world's #1 CRM company and drive digital transformation globally.	To help businesses connect with their customers in a whole new way.	Self-Act-Pos	Sociality-Pos	67	22	0.022
84	IBM Corporation	Technology	To be the catalyst that makes the world work better.	To lead in the creation, development and manufacture of the industry's most advanced information technologies.	Sociality-Pos	Self-Act-Pos	22	41	0.053
85	Qualcomm Inc.	Technology	To invent breakthrough technologies that transform how the world connects and communicates.	To enable the wireless digital revolution through innovative semiconductor and wireless technology solutions.	Self-Act-Pos	Safety-Pos	41	34	0.125
86	Texas Instruments	Technology	To create a better world by making electronics more affordable through semiconductors.	To design and sell semiconductors that help customers develop innovative electronic products worldwide.	Safety-Pos	Self-Act-Pos	34	41	0.125
87	Applied Materials	Technology	To be the leading materials engineering solutions provider.	To enable the technologies that shape the future through materials engineering innovations.	Self-Act-Pos	Self-Act-Pos	67	41	0.038
88	Broadcom Inc.	Technology	To connect everything through semiconductor and infrastructure software solutions.	To build products that help connect our world and enable breakthrough innovations.	Sociality-Pos	Sociality-Pos	22	22	1.000
89	NVIDIA Corporation	Technology	To be the engine of modern artificial intelligence.	To invent the future of computing through visual computing and accelerated computing platforms.	Self-Act-Pos	Self-Act-Pos	67	41	0.038

90	AMD (Advanced Micro Devices)	Technology	To build great products that accelerate next-generation computing experiences.	To deliver high-performance computing solutions that power innovation across industries worldwide.	Self-Act-Pos	Self-Act-Pos	41	41	1.000
91	AT&T Inc.	Comm. Services	To create connection with every customer, every day.	To connect people with their world, everywhere they live and work, and do it better than anyone else.	Sociality-Pos	Sociality-Pos	22	22	1.000
92	Verizon Communications	Comm. Services	To create a world where people can accomplish more through reliable, innovative technology.	To deliver the promise of the digital world by enhancing consumers' and businesses' connectivity.	Sociality-Pos	Safety-Pos	22	34	0.077
93	T-Mobile US	Comm. Services	To be the best in the world at connecting customers to their world.	To provide Un-carrier moves that eliminate customer pain points and deliver superior wireless experiences.	Sociality-Pos	Sociality-Pos	22	22	1.000
94	Charter Communications	Comm. Services	To connect and empower people through superior broadband.	To deliver advanced communications technology that improves lives and helps communities thrive.	Sociality-Pos	Sociality-Pos	22	22	1.000
95	Comcast Corporation	Comm. Services	To connect millions to the moments and experiences that matter most.	To create incredible technology and entertainment that connects millions of people to the moments that matter.	Sociality-Pos	Sociality-Pos	22	22	1.000
96	American Airlines	Industrials	To care for people on life's journey.	To provide safe, dependable and friendly air transportation along with related services worldwide.	Safety-Pos	Safety-Pos	34	34	1.000
97	Delta Air Lines	Industrials	To be the world's most trusted, reliable and customer-focused airline.	To connect the world through industry-leading customer service and operational excellence.	Self-Act-Pos	Sociality-Pos	67	22	0.022
98	United Airlines	Industrials	To build a great airline that customers choose to fly, employees are proud to work for, and investors want to invest in.	To connect people and unite the world through superior customer service and innovative travel solutions.	Self-Act-Pos	Sociality-Pos	41	22	0.053
99	FedEx Corporation	Industrials	To produce superior financial returns for shareowners by providing high value-added logistics, transportation and related information services.	To deliver solutions that connect people and possibilities around the world responsibly and resourcefully.	Survival-Neu	Sociality-Pos	12	22	0.091
100	UPS (United Parcel Service)	Industrials	To become the enablers of global e-commerce and move the world forward.	To grow our global business by serving the logistics needs of customers with excellence and innovation.	Sociality-Pos	Sociality-Pos	22	22	1.000

Note: All 100 companies are listed above in sequential order. * = excluded from correlation analyses (missing Excess Return data). † = ambiguous cases used in robustness Test 1 (Table 3).

Appendix B. Stock Performance Panel

Complete stock performance data for all 100 companies. Excess Return (Total Return minus Benchmark Return) is the primary dependent variable. Sharpe Ratio values above 3.5 are anomalous and excluded from analysis. Historical stock price data retrieved from Yahoo Finance (finance.yahoo.com) for 01/01/2022 to 31/12/2024. * = excluded from correlation analyses.

Company	Sector	Total Return	Benchmark Return	Excess Return	Volatility	Sharpe Ratio	Performance Summary
Boeing	Industrials	0.113	0.741	-0.629	0.369	0.305	Severe Underperformer
Lockheed Martin	Industrials	0.755	0.741	0.013	0.232	n/a	Outperformer
Raytheon Technologies	Industrials	n/a	0.741	n/a	0.243	n/a	Strong Outperformer
Northrop Grumman	Industrials	0.637	0.741	-0.104	0.261	n/a	Underperformer
Nike, Inc.	Consumer Disc.	-0.702	0.173	-0.875	0.372	n/a	Severe Underperformer
Gap Inc. *	Consumer Disc.	n/a	0.173	n/a	n/a	n/a	Insufficient Data
Ford Motor Company	Consumer Disc.	-0.231	0.173	-0.404	0.388	-0.596	Severe Underperformer
General Motors	Consumer Disc.	0.342	0.173	0.169	0.367	0.932	Outperformer
Tesla, Inc.	Consumer Disc.	-0.031	0.173	-0.204	0.603	-0.052	Underperformer
Dow Inc.	Materials	-0.133	0.263	-0.396	0.345	-0.384	Severe Underperformer
DuPont de Nemours	Materials	0.482	0.263	0.219	0.302	n/a	Strong Outperformer
General Electric	Industrials	n/a	0.741	n/a	0.312	n/a	Strong Outperformer
3M Company	Industrials	0.148	0.741	-0.593	0.293	0.507	Underperformer
Berkshire Hathaway	Financials	0.547	0.422	0.125	0.176	n/a	Strong Outperformer
Honeywell International	Industrials	0.235	0.741	-0.506	0.220	n/a	Underperformer
Procter & Gamble	Consumer Staples	-0.024	0.191	-0.215	0.182	-0.131	Underperformer
Estée Lauder	Consumer Staples	-0.778	0.191	-0.970	0.461	n/a	Severe Underperformer
L'Oréal USA	Consumer Staples	-0.049	0.191	-0.240	0.276	-0.178	Underperformer
Colgate-Palmolive	Consumer Staples	0.084	0.191	-0.107	0.190	0.442	Market Performer
Kimberly-Clark	Consumer Staples	-0.202	0.191	-0.393	0.206	-0.978	Severe Underperformer
Philip Morris Int'l	Consumer Staples	n/a	0.191	n/a	0.229	n/a	Strong Outperformer
Altria Group	Consumer Staples	0.898	0.191	0.707	0.206	n/a	Strong Outperformer
Amazon.com, Inc.	Consumer Disc.	0.499	0.173	0.326	0.370	n/a	Strong Outperformer
Chevron Corporation	Energy	0.854	n/a	n/a	0.256	n/a	n/a
ExxonMobil	Energy	n/a	n/a	n/a	0.266	n/a	n/a
ConocoPhillips	Energy	0.940	n/a	n/a	0.330	n/a	n/a

Duke Energy	Utilities	0.428	0.440	−0.012	0.182	n/a	Market Performer
NextEra Energy	Utilities	0.102	0.440	−0.339	0.278	0.366	Underperformer
JPMorgan Chase	Financials	n/a	0.422	n/a	0.250	n/a	Strong Outperformer
Visa Inc.	Financials	0.452	0.422	0.030	0.223	n/a	Outperformer
Bank of America	Financials	0.281	0.422	−0.142	0.272	1.03	Underperformer
American Express	Financials	n/a	0.422	n/a	0.297	n/a	Strong Outperformer
Goldman Sachs	Financials	n/a	0.422	n/a	0.282	n/a	Strong Outperformer
Morgan Stanley	Financials	n/a	0.422	n/a	0.292	n/a	Strong Outperformer
Wells Fargo	Financials	0.767	0.422	0.345	0.299	n/a	Strong Outperformer
Citigroup Inc.	Financials	n/a	0.422	n/a	0.299	n/a	Strong Outperformer
BlackRock Inc.	Financials	0.296	0.422	−0.127	0.274	n/a	Underperformer
Mastercard Inc.	Financials	0.412	0.422	−0.010	0.231	n/a	Market Performer
PayPal Holdings	Financials	−0.736	0.422	n/a	0.444	n/a	Severe Underperformer
Archer Daniels Midland	Consumer Staples	0.156	0.191	−0.035	0.300	0.522	Market Performer
The Coca-Cola Company	Consumer Staples	0.428	0.191	0.237	0.162	n/a	Strong Outperformer
Starbucks Corporation	Consumer Staples	−0.055	0.173	−0.228	0.325	−0.169	Underperformer
PepsiCo, Inc.	Consumer Staples	0.017	0.191	−0.174	0.189	0.089	Underperformer
McDonald's Corporation	Consumer Disc.	0.231	0.173	0.059	0.176	n/a	Outperformer
Mondelez International	Consumer Disc.	−0.049	0.173	−0.240	0.200	−0.243	Underperformer
Kraft Heinz Company	Consumer Staples	−0.255	0.191	−0.446	0.229	n/a	Severe Underperformer
General Mills	Consumer Staples	−0.380	0.191	−0.571	0.215	n/a	Severe Underperformer
Kellogg Company *	Consumer Staples	n/a	0.191	n/a	n/a	n/a	Insufficient Data
Tyson Foods	Consumer Staples	−0.158	0.191	−0.349	0.252	−0.626	Severe Underperformer
Sysco Corporation	Consumer Staples	0.079	0.191	−0.113	0.240	0.328	Market Performer
Johnson & Johnson	Healthcare	0.490	0.125	0.365	0.172	n/a	Strong Outperformer
Merck & Co.	Healthcare	0.673	0.125	0.548	0.232	n/a	Strong Outperformer
Pfizer Inc.	Healthcare	−0.409	0.125	−0.534	0.247	n/a	Severe Underperformer
AbbVie Inc.	Healthcare	0.745	0.125	0.620	0.235	n/a	Strong Outperformer
Eli Lilly and Company	Healthcare	n/a	0.125	n/a	0.326	n/a	Strong Outperformer
UnitedHealth Group	Healthcare	−0.241	0.125	−0.366	0.344	−0.701	Severe Underperformer
CVS Health	Healthcare	−0.152	0.125	−0.277	0.311	−0.487	Underperformer
Walgreens Boots Alliance *	Healthcare	n/a	0.125	n/a	n/a	n/a	Insufficient Data

Caterpillar Inc.	Industrials	n/a	0.741	n/a	0.307	n/a	Strong Outperformer
Deere & Company	Industrials	0.754	0.741	0.013	0.293	n/a	Outperformer
Netflix, Inc.	Comm. Services	0.561	0.577	-0.016	0.471	n/a	Market Performer
Walt Disney Company	Comm. Services	-0.316	0.577	-0.892	0.301	n/a	Severe Underperformer
Walmart Inc.	Consumer Disc.	n/a	0.173	n/a	0.222	n/a	Strong Outperformer
Home Depot	Consumer Disc.	-0.075	0.173	-0.247	0.247	-0.303	Underperformer
Target Corporation	Consumer Disc.	-0.355	0.173	-0.528	0.380	-0.936	Severe Underperformer
Costco Wholesale	Consumer Disc.	0.860	0.173	0.688	0.232	n/a	Strong Outperformer
Lowe's Companies	Consumer Disc.	0.047	0.173	-0.126	0.265	0.177	Underperformer
Best Buy Co.	Consumer Disc.	-0.238	0.173	-0.411	0.376	-0.633	Severe Underperformer
Macy's Inc.	Consumer Disc.	-0.124	0.173	-0.297	0.520	-0.239	Underperformer
Ross Stores	Consumer Disc.	n/a	0.173	n/a	0.300	n/a	Strong Outperformer
TJX Companies	Consumer Disc.	n/a	0.173	n/a	0.219	n/a	Strong Outperformer
AutoZone Inc.	Consumer Disc.	0.755	0.173	0.583	0.244	n/a	Strong Outperformer
O'Reilly Automotive	Consumer Disc.	n/a	0.173	n/a	0.229	n/a	Strong Outperformer
CarMax Inc.	Consumer Disc.	-0.688	0.173	-0.861	0.470	n/a	Severe Underperformer
Apple Inc.	Technology	0.534	0.861	-0.327	0.282	n/a	Underperformer
Microsoft Corporation	Technology	0.340	0.861	-0.522	0.273	n/a	Underperformer
Alphabet Inc.	Technology	n/a	0.861	n/a	0.323	n/a	Strong Outperformer
Meta Platforms, Inc.	Comm. Services	n/a	0.577	n/a	0.464	n/a	Strong Outperformer
Oracle Corporation	Technology	n/a	0.861	0.405	0.411	3.08	Outperformer
Intel Corporation	Technology	0.323	0.861	-0.539	0.518	0.622	Underperformer
Cisco Systems, Inc.	Technology	0.618	0.861	-0.243	0.244	n/a	Underperformer
Adobe Inc.	Technology	-0.547	0.861	n/a	0.372	n/a	Severe Underperformer
Salesforce, Inc.	Technology	-0.246	0.861	n/a	0.375	-0.656	Severe Underperformer
IBM Corporation	Technology	n/a	0.861	n/a	0.258	n/a	Strong Outperformer
Qualcomm Inc.	Technology	-0.196	0.861	n/a	0.386	-0.508	Severe Underperformer
Texas Instruments	Technology	0.405	0.861	-0.456	0.318	n/a	Underperformer
Applied Materials	Technology	n/a	0.861	n/a	0.445	n/a	Strong Outperformer
Broadcom Inc.	Technology	n/a	0.861	n/a	0.444	n/a	Strong Outperformer

NVIDIA Corporation	Technology	n/a	0.861	n/a	0.524	n/a	Strong Outperformer
AMD	Technology	n/a	0.861	n/a	0.549	n/a	Strong Outperformer
AT&T Inc.	Comm. Services	0.759	0.577	0.183	0.246	n/a	Strong Outperformer
Verizon Communications	Comm. Services	0.169	0.577	-0.408	0.225	0.750	Underperformer
T-Mobile US	Comm. Services	0.717	0.577	0.141	0.241	n/a	Strong Outperformer
Charter Communications	Comm. Services	-0.626	0.577	n/a	0.389	n/a	Severe Underperformer
Comcast Corporation	Comm. Services	-0.286	0.577	-0.863	0.264	n/a	Severe Underperformer
American Airlines	Industrials	-0.387	0.741	n/a	0.483	-0.801	Severe Underperformer
Delta Air Lines	Industrials	0.750	0.741	0.009	0.408	n/a	Outperformer
United Airlines	Industrials	n/a	0.741	n/a	0.489	n/a	Outperformer
FedEx Corporation	Industrials	0.632	0.741	-0.109	0.338	n/a	Underperformer
UPS	Industrials	-0.398	0.741	n/a	0.289	n/a	Severe Underperformer

Note: All 100 companies are listed above in sequential order. Green values indicate the strongest outperformers; dark red values indicate severe underperformers (Excess Return ≤ -0.35). * = excluded from correlation analyses. n/a = non-computable value.

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