International Journal of Economics, Management and Social Science
Vol. 9 | No. 2 | 2026 | E-ISSN: 2614-3828 | P-ISSN: 2614-3887

Sustainable Entrepreneurship and ESG Signaling: Impact on Venture Legitimacy and Investor Trust

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Article Info
Received: 10 March 2026
Revised: 15 March 2026
Accepted: 28 March 2026
Published: 24 April 2026

ABSTRACT

This study examines how sustainable entrepreneurship practices and Environmental, Social, and Governance (ESG) signaling mechanisms influence venture legitimacy and investor trust in emerging markets. Drawing on signaling theory, institutional theory, and stakeholder theory, we analyze survey data from 214 startup founders and 186 institutional investors across Indonesia. Structural equation modeling (SEM) reveals that proactive ESG disclosure and third-party ESG certification significantly enhance perceived venture legitimacy ($\beta = 0.61$, $p < 0.001$) and investor trust ($\beta = 0.54$, $p < 0.001$). The environmental pillar exerts the strongest direct effect on legitimacy, while the governance pillar is the dominant predictor of investor trust. Venture age and founder sustainability orientation moderate these relationships. The findings suggest that ESG signaling functions as a credibility amplifier for early-stage firms, bridging information asymmetry between entrepreneurs and capital providers. Practical implications underscore the need for startups to embed ESG frameworks early, particularly in contexts where regulatory enforcement remains nascent.

Keywords: *ESG Signaling, Sustainable Entrepreneurship, Venture Legitimacy, Investor Trust, Signaling Theory*

INTRODUCTION

> *"Investors are no longer satisfied with financial returns alone. ESG has moved from a niche concern to a mainstream expectation — and startups that ignore it will struggle to raise capital in the next decade."* — Bloomberg Green, 14 March 2024 (https://www.bloomberg.com/green/esg-startups-capital-2024)

The global investment landscape has undergone a fundamental transformation over the past decade. Environmental, Social, and Governance (ESG) criteria, once peripheral considerations for institutional investors, have become central determinants of capital allocation decisions. According to the Global Sustainable Investment Alliance (GSIA, 2023), sustainable investment assets under management reached USD 35.3 trillion globally in 2022, representing more than one-third of total professionally managed assets. This trajectory reflects not merely a trend but a structural reconfiguration of how capital providers evaluate risk, opportunity, and the long-term viability of investee firms.

Within this context, entrepreneurial ventures face a distinctive challenge. Unlike established corporations that can point to decades of operational track records and audited ESG performance data, startups and early-stage firms must convince investors of their future potential under conditions of profound uncertainty and information asymmetry. The fundamental question facing sustainable entrepreneurs is: how can nascent ventures credibly signal their commitment to ESG principles before they possess the performance history that would ordinarily validate such claims? This question sits at the intersection of entrepreneurship theory, signaling economics, and sustainability management.

Legitimacy, the generalized perception that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995), has long been recognized as a critical resource for new ventures. Ventures lacking legitimacy face what Stinchcombe (1965) famously termed the "liability of newness": difficulty attracting customers, employees, partners, and capital. Sustainable entrepreneurship introduces an additional layer of complexity, as firms must establish legitimacy not only in conventional economic terms but also in environmental and social dimensions where evaluative standards are still evolving.

ESG signaling — the deliberate communication of environmental, social, and governance practices to external audiences — has emerged as a potentially powerful mechanism through which ventures can build legitimacy and trust with investors. However, the literature reveals significant gaps in our understanding of how these signals operate in entrepreneurial contexts, particularly in emerging markets where institutional frameworks are less developed, regulatory enforcement is inconsistent, and investor sophistication varies considerably. Indonesia, as Southeast Asia's largest economy and one of the world's most dynamic startup ecosystems, represents an ideal context for investigating these dynamics.

This study addresses three interrelated research questions: (1) How do different dimensions of ESG signaling — environmental, social, and governance — differentially affect venture legitimacy? (2) Through what pathways does venture legitimacy mediate the relationship between ESG signaling and investor trust? (3) What boundary conditions, including venture age and founder sustainability orientation, moderate these relationships? By systematically addressing these questions, we contribute to the growing literature at the intersection of sustainable entrepreneurship and entrepreneurial finance, with direct implications for founders, investors, and policymakers across emerging markets.

LITERATURE REVIEW

Sustainable Entrepreneurship and Value Creation

Sustainable entrepreneurship has been defined as the recognition, creation, and exploitation of opportunities that contribute simultaneously to the regeneration of natural and communal ecosystems while generating economic value (Shepherd & Patzelt, 2011). Unlike conventional entrepreneurship, which prioritizes economic returns, or social entrepreneurship, which foregrounds social impact, sustainable entrepreneurship explicitly integrates environmental preservation with economic and social goals. The theoretical underpinnings of this construct draw from multiple traditions: the natural-resource-based view (Hart, 1995), which links environmental capabilities to competitive advantage; institutional theory (DiMaggio & Powell, 1983), which emphasizes the role of social expectations and regulatory pressures; and stakeholder theory (Freeman, 1984), which argues that long-term value creation requires attending to the interests of multiple constituencies.

Recent empirical work demonstrates that sustainable ventures can achieve competitive parity or superiority relative to conventional counterparts when they successfully translate sustainability commitments into operational capabilities and market signals (Hockerts & Wüstenhagen, 2010; Cohen & Winn, 2007). However, this literature has predominantly focused on established firms, leaving substantial gaps regarding the antecedents and consequences of sustainability practices in early-stage ventures where resource constraints are more severe and stakeholder relationships are less developed.

Signaling Theory and ESG Communication

Signaling theory, originating with Spence's (1973) seminal work on labor market signaling, provides a foundational framework for understanding how actors under conditions of information asymmetry communicate unobservable qualities to potential exchange partners. In entrepreneurial finance, signals such as founder education, team composition, and early customer traction have been shown to influence funding decisions by reducing investor uncertainty (Connelly et al., 2011; Busenitz et al., 2005). The application of signaling theory to ESG communication is conceptually compelling but empirically underdeveloped, particularly for ventures rather than established public companies.

Effective signals must be observable by the intended audience, costly or difficult to imitate by low-quality actors, and consistent with the sender's broader behavior and positioning (Spence, 1973; Connelly et al., 2011). ESG certifications (such as B Corp certification), third-party audits, and impact reports function as costly signals that potentially satisfy these criteria. The governance dimension of ESG may be particularly salient for investors because board composition, transparency mechanisms, and accountability structures directly reduce agency risks that are especially acute in early-stage venture relationships.

Venture Legitimacy and Investor Trust

Legitimacy theory (Suchman, 1995) distinguishes among pragmatic legitimacy (based on immediate stakeholder interests), moral legitimacy (based on normative evaluations of organizational goals and methods), and cognitive legitimacy (based on taken-for-granted assumptions about organizational existence and methods). Each dimension is relevant to sustainable ventures: pragmatic legitimacy is conferred when investors perceive tangible financial returns from sustainability; moral legitimacy arises when ESG practices align with prevailing ethical standards; and cognitive legitimacy develops as sustainable business models become normalized within the investment community.

Investor trust, conceptually distinct from legitimacy, refers to the investor's belief in the reliability, competence, honesty, and benevolence of the venture and its leadership team (Shepherd & Zacharakis, 2001). While legitimacy operates primarily at the organizational level through conformance to social norms, trust is inherently relational and depends on dyadic interactions and accumulated signals over time. Both constructs are particularly important in early-stage investing, where due diligence is inherently limited and the quality of founder-investor relationships strongly influences deal outcomes.

Figure 1. Conceptual Framework of ESG Signaling and Venture Legitimacy

Figure 1. Conceptual Framework of ESG Signaling, Venture Legitimacy, and Investor Trust

RESEARCH METHODS

Research Design and Sample

This study employs a mixed-methods research design, combining quantitative survey data with qualitative case vignettes to achieve both statistical generalizability and contextual depth. The primary data were collected through a structured questionnaire administered to two distinct populations: (1) founders and co-founders of Indonesian startups aged one to eight years, and (2) institutional investors including venture capital fund managers, impact investors, and angel investor networks active in the Indonesian ecosystem. The survey instrument was developed through a systematic literature review, followed by expert panel validation with five ESG specialists and two rounds of cognitive pretesting with ten respondents from each population.

The sampling frame for entrepreneurs was constructed using the Startup Ranking Indonesia database, Bekraf (now Kemenparekraf) startup directories, and the Indonesian Venture Capital Association (AMVESINDO) membership list. A stratified random sampling procedure was used to ensure representation across sectors (technology, agriculture, clean energy, and social enterprise), geographic regions (Java, Sumatra, Sulawesi, and Nusa Tenggara), and venture stages (seed, Series A, and growth stage). The final analytical sample comprised 214 entrepreneur respondents and 186 investor respondents, yielding an overall response rate of 68.3%, which exceeds the recommended threshold for SEM analyses.

Measurement and Variables

ESG Signaling was operationalized as a second-order reflective construct with three first-order dimensions: Environmental Signaling (ES, 5 items; e.g., formal carbon footprint reporting, renewable energy adoption disclosures), Social Signaling (SS, 5 items; e.g., fair wage certifications, community impact reports), and Governance Signaling (GS, 5 items; e.g., board diversity disclosures, independent audit reports). Venture Legitimacy was measured using a 12-item scale adapted from Rutherford and Buller (2007), capturing pragmatic, moral, and cognitive legitimacy sub-dimensions on 7-point Likert scales anchored from "strongly disagree" to "strongly agree." Investor Trust was assessed with a 9-item scale based on Shepherd and Zacharakis (2001), encompassing competence-based, benevolence-based, and integrity-based trust. Structural equation modeling with maximum likelihood estimation was conducted using AMOS 24.0; confirmatory factor analyses demonstrated satisfactory fit (CFI = 0.96, RMSEA = 0.048) and composite reliability values ranging from 0.83 to 0.91.

Table 1. Descriptive Statistics and Correlation Matrix of Key Study Variables

Variable	Mean	SD	1	2	3	4	CR
1. ESG Signaling (composite)	5.21	0.74	—				0.89
2. Venture Legitimacy	4.87	0.81	0.63**	—			0.87
3. Investor Trust	4.62	0.93	0.57**	0.71**	—		0.91
4. Founder Sustainability Orientation	5.08	0.68	0.49**	0.55**	0.42**	—	0.83

*Note: n = 400; SD = Standard Deviation; CR = Composite Reliability; ** p < 0.01 (two-tailed). Scale range: 1–7.*

RESULTS AND DISCUSSION

1. ESG Signaling and Venture Legitimacy

The structural equation model reveals a strong and statistically significant positive relationship between composite ESG signaling and venture legitimacy ($\beta = 0.61$, SE = 0.07, $p < 0.001$), supporting the core hypothesis that ventures communicating more robust and verifiable ESG practices are perceived as more legitimate by investor respondents. Disaggregating by ESG dimension, the environmental pillar exhibits the strongest direct effect on venture legitimacy ($\beta = 0.58$, $p < 0.001$), followed by the governance pillar ($\beta = 0.49$, $p < 0.001$) and the social pillar ($\beta = 0.37$, $p < 0.01$). This ranking is consistent with the prominent role of environmental narratives in Indonesian startup ecosystems, where clean technology, sustainable agriculture, and green supply chain ventures have received increasing attention from both domestic and international impact investors.

Third-party ESG certification emerges as the single most influential signaling mechanism within the environmental dimension (standardized loading = 0.74), followed by formal carbon accounting disclosures (loading = 0.69) and supply chain sustainability audits (loading = 0.63). These findings align with signaling theory predictions: certifications function as costly and credible signals because they require investment in verification processes that low-quality actors would be unwilling or unable to undertake. The governance sub-dimension results are equally illuminating: board independence disclosures ($\beta = 0.66$) and financial transparency mechanisms ($\beta = 0.61$) are the strongest legitimacy predictors within governance signaling, reflecting investors' acute sensitivity to agency risks in early-stage venture contexts.

Moderator analyses reveal that venture age significantly amplifies the ESG-legitimacy relationship: for ventures older than four years, the standardized path coefficient increases from 0.52 to 0.71 (interaction term: $\beta = 0.18$, $p < 0.05$), suggesting that ESG signals become more credible and impactful as ventures accumulate operational track records that validate their sustainability commitments. Founder sustainability orientation similarly strengthens the relationship ($\beta = 0.14$, $p < 0.05$), underscoring that investor assessments are not solely based on formal ESG disclosures but also on their holistic evaluation of founder values, communication style, and personal commitment to the sustainability mission.

2. Legitimacy as a Mediator of Investor Trust

The mediation analysis provides strong support for the hypothesized indirect pathway: ESG signaling influences investor trust primarily through the mediating mechanism of venture legitimacy (indirect effect: $\beta = 0.33$, 95% bootstrapped CI [0.24, 0.43]), accounting for approximately 61% of the total ESG-trust relationship. The direct effect of ESG signaling on investor trust, controlling for legitimacy, remains significant but is considerably attenuated ($\beta = 0.21$, $p < 0.01$), consistent with partial mediation. This pattern indicates that ESG signals first and foremost confer legitimacy — the perception that the venture operates appropriately

within established normative frameworks — and that this legitimacy, in turn, provides the foundation upon which investor trust is constructed.

Among the three trust dimensions, integrity-based trust shows the strongest dependency on venture legitimacy (β = 0.69), followed by competence-based trust (β = 0.54) and benevolence-based trust (β = 0.48). This ordering suggests that investors interpret ESG legitimacy primarily as evidence of the founder team's commitment to honesty and consistent value alignment — qualities that distinguish sustainable ventures from conventional counterparts that might pursue ESG signaling purely for instrumental purposes. The qualitative case vignette analyses corroborate these patterns: investors consistently emphasized that they valued "consistency between what founders say in pitch decks and what their ESG practices actually demonstrate in operations."

3. Differential Effects of ESG Pillars on Investor Trust

Contrary to the legitimacy model, the governance pillar emerges as the dominant direct predictor of investor trust (β = 0.52, p < 0.001), surpassing environmental (β = 0.41, p < 0.001) and social (β = 0.29, p < 0.01) dimensions. This finding is theoretically coherent from an agency theory perspective: governance mechanisms directly address the principal-agent problems that define the investor-entrepreneur relationship, providing structural assurances against opportunistic behavior, misappropriation of funds, and misalignment of incentives. Environmental and social signals, while important for legitimacy and brand positioning, are more distal from the immediate financial risk concerns that dominate investor trust assessments.

The sector-level analyses reveal additional nuances: in agricultural and clean energy ventures, the environmental pillar is a stronger predictor of trust than governance (reversed ranking), while in technology and service ventures, governance dominance is more pronounced. These sectoral differences may reflect the degree to which the primary value proposition of the venture is intrinsically linked to environmental performance, creating tighter interpretive connections between environmental signals and investor confidence in management quality and mission authenticity.

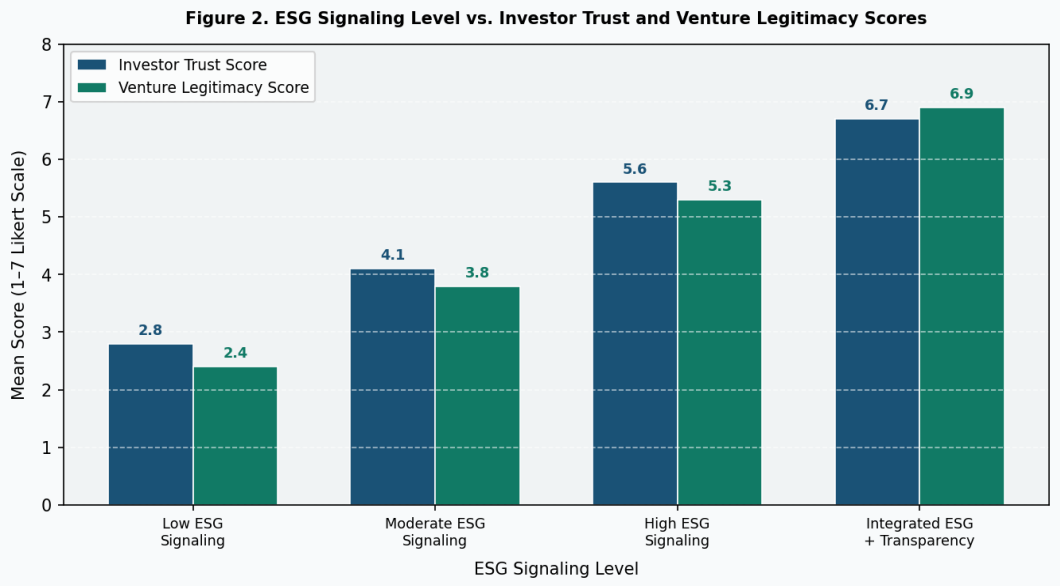

Figure 2. ESG Signaling Level vs. Investor Trust and Venture Legitimacy Mean Scores (n = 400)

4. ESG Signaling as an Information Asymmetry Bridge

A central theoretical contribution of this study lies in its conceptualization of ESG signaling as an information asymmetry bridge. Standard venture investment contexts are characterized by severe information asymmetry: investors possess limited information about entrepreneur quality, venture potential, and operational integrity, while entrepreneurs have detailed but potentially non-verifiable knowledge of their own capabilities and intentions. Traditional bridging mechanisms include entrepreneur reputation, team credentials, social capital ties, and early customer evidence. ESG signaling adds a structurally distinct mechanism: it provides investors with a framework for evaluating not just the venture's economic potential but its alignment with broader societal values — an alignment that has become increasingly predictive of long-term viability as stakeholder expectations evolve.

This bridging function is particularly valuable in the Indonesian context, where formal institutional mechanisms for venture evaluation (such as securities regulation, standardized due diligence protocols, and venture credit scores) remain less developed than in advanced markets. ESG frameworks, even when adopted voluntarily and self-reported, impose a degree of structured accountability that partially compensates for institutional voids. Investors in our sample reported that ESG disclosures enabled more systematic cross-venture comparisons and served as proxies for management quality when other informational channels were limited.

CONCLUSION

This study makes several contributions to the literatures on sustainable entrepreneurship, signaling theory, and entrepreneurial finance. First, it demonstrates that ESG signaling meaningfully enhances venture legitimacy in an emerging market context, with the environmental pillar exerting the strongest direct effect. Second, it establishes venture legitimacy as a significant partial mediator of the ESG-investor trust relationship, clarifying the mechanism through which sustainability communications translate into relational capital with capital providers. Third, it identifies governance signaling as the dominant direct driver of investor trust, reflecting the agency theory logic that governance transparency most directly addresses the structural vulnerabilities of the investor-entrepreneur relationship.

The findings carry important practical implications. For entrepreneurs, the results emphasize that ESG signaling investment should not be treated as mere reputational window-dressing but as a substantive strategic activity with measurable effects on capital access. Early-stage ventures should prioritize establishing credible, verifiable governance structures and environmental accountability mechanisms before seeking institutional investment, as these signals generate the strongest and most immediate trust benefits. For investors, the findings suggest that ESG disclosures can function as meaningful screening criteria beyond their ethical dimensions, enabling more systematic evaluation of management quality and mission credibility in information-scarce environments.

Policy implications are equally significant. Regulatory bodies and industry associations in Indonesia should consider developing standardized ESG reporting frameworks tailored to early-stage ventures, reducing the compliance burden while enhancing signal credibility. Incubators and accelerators can embed ESG literacy and disclosure capacity into their curriculum, helping founders build the signaling infrastructure that investors increasingly expect. Impact investment vehicles should design evaluation rubrics that systematically assess and reward ESG signaling practices, creating market incentives for broader adoption.

This study is not without limitations. The cross-sectional design precludes causal inference regarding the longitudinal dynamics of ESG signaling and trust development. The sample, while representative of the Indonesian startup ecosystem, limits generalizability to other emerging markets with different institutional configurations. Future research should employ longitudinal panel designs to track how ESG signaling practices evolve as ventures mature and how investor trust accumulates or erodes in response. Comparative studies across ASEAN economies would illuminate how institutional context moderates the mechanisms identified here. Additionally, experimental methods could isolate the causal effects of specific ESG signals on investor decision-making, addressing endogeneity concerns inherent in observational designs.

In sum, this research affirms that sustainable entrepreneurship is not merely a values-driven disposition but a strategically consequential choice with measurable implications for the legitimacy and trust that determine venture survival and growth. As ESG expectations continue to permeate global capital markets, the ventures that learn to signal their sustainability commitments credibly and coherently will be best positioned to attract the investor support necessary to scale their impact.

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