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Evolving Global Innovation Paradigms and the ESG Nexus in a Fragmented World: An Evolutionary Narrative Review (2015-2025)

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Abstract

This is an evolutionary narrative review that examines the way in which the global innovation paradigm will evolve in the period between 2015 and 2025 and the way in which the correlation between the Environmental, Social, and Governance performance and the result of innovation transformation. We synthesize state-led economy empirical evidence on the basis of 27 peer-reviewed articles, emerging markets, and developed economy empirical evidence. The review sets up transmission mechanisms where the ESG performance enhances the ability of innovation: alleviation of financing constraint by reducing the cost of capital, agency cost by reducing the cost, the stakeholder legitimacy by maximizing the stakeholder legitimacy, and digital integration to increase spillovers. The asymmetries of the benefits of supply chain innovations can also be seen through the analysis of having down stream firms enjoying the gains and the upstream suppliers suffering losses without corresponding returns. The synthesis documents a negative U-shaped relationship among the green innovation and public attention. Geographic analysis reveals that a large proportion of studies consider the Chinese institutional settings which raises the question of generalizability of the theories. The analysis integrates the frameworks and Research directions of Resource-Based View and Institutional Theory in the study of the limitations in the methodology.

Keywords: ESG Performance, Green Innovation, Supply Chain Asymmetry, Digital Transformation, Institutional Context

Introduction

The concept of global innovation has been transformed structurally over the 10-year period between the years 2015 and 2025. The internationalization of research and development, international labor cost arbitrage, international transfer of technological capabilities have been given concentration in the previous academic literature. It is possible to describe the

modern world environment as the pace of climate change, the absence of geopolitical integrity, and the role of digital destabilization when the innovation becomes the instrument of organizational sustainability and integrative and adaptive stability (Bachmann et al., 2025; Pan et al., 2023).

There has been a shift in the paradigm to value maximization instead of profit maximization in which environmental, social, and governance (ESG) performance is an origin of strategic revitalization and competitive advantage. The change transcends the idea of creating shared value to the concept of sustainability-based innovation ecosystems that are interdependent among the stakeholders, not certain about regulations, and convergent in technology (Rosati et al., 2023). ESG performance has been supported through evidence-based research to be an asset-based strategic instrument that assists finance companies to surmount financing constraints, agency costs are eliminated, and stakeholder legitimacy is increased. Tang, Wang, and Zhang (2022) present preliminary evidence of Chinese listed companies that ESG high performance lowers capital expenditure and boosts R&D intensity which acts against conventional trade-off proposals between sustainability and innovation investment.

The recent literature has established good positive correlation between ESG performance and corporate innovation in different institutional contexts. Wu et al. (2024) demonstrate that the ESG performance is significantly related to enhancing the green innovation of the company by reducing the financing requirement and lowering the agency cost, and the impact is more pronounced between the companies that are higher in the orientation of innovation. Sun and Xiong (2025) propose that ESG leads to innovation in three aspects that are critical, that is, enhancement of innovation willingness, reduction of financing limitations, and human capital with the most significant influence of the environmental aspect. Two-way confirmation of green innovation presented by Liu et al. (2024) is that it does not only have a positive relationship with ESG performance but is also positively influencing corporate ESG rating and it happens that it is a virtuous cycle between sustainability practices and innovation outputs. Such mechanisms vary in their impact in various circumstances: Tripopsakul (2025) notes that the environmental and governance pillars are the most active in encouraging green innovation in ASEAN companies, but social performance has a more positive correlation with financial performance, which is also determined by institutional priorities established in the global supply chain connection.

However, still, there exist enormous gaps between theory and outcomes. Liu (2023) suggests that heterogeneity in the ESG-innovation relationships is that there exist two forms of innovation, namely, substantial (breakthrough technologies) and strategic (incremental improvements) innovation, with ESG being more influential in the former. It means that ESG funds are oriented on transformational but not cosmetic innovation. The unlinear interactions that are not observed previously, but are revealed by Song and Ma (2025), entail the positive role of moderate levels of public attention in the enhancement of green innovation due to the establishment of constructive pressure over the stakeholders, and extreme scrutiny in the emergence of threat rigidity and defensive behaviors. The asymmetries of the supply chain can be captured by the Sun et al. (2025), where the ESG performance of downstream firms have positive impacts on the innovation of the downstream firms, but with minimal effects on the upstream suppliers which demonstrates the power difference in the sustainability-oriented innovation networks.

A new frontier has been created through the digital transformation and sustainability. Jorzik et al. (2024) overview green technology startups and find out that the majority of them use AI as a core value proposition rather than a facilitative tool and AI former helps to optimize waste sorting, automate ESG reporting, and manage energy. Manotti et al. (2025) take the New Space Economy perspective based on the technology affordance approaches, where satellite data analytics can contribute to sustainable business models through the establishment of transparency (emissions monitoring), efficiency (precision agriculture), and democratization (access to climate information). The rapid convergence of digital and green is defined by Bachmann et al. (2025) as business model innovations in the manufacturing processes are more sustainable with the use of digital technologies and sensor-based circular models, platform-mediated sharing systems, and predictive optimization architecture are becoming the archetypes.

The exceptional importance of institutional context to propel ESG-innovation dynamics lies in the research, yet geographic concentration is quite high. As Chen et al. (2024) demonstrate, the relationship between the ESG and performance to corporate reputation is supplementary because of the innovation of green technologies green technology, and the China-orientedly regulatory model with its high levels of focus on the compliance is the mediator between the two relations. Fulop et al. (2025) provide the opposite findings of the Romanian SMEs in the emerging markets in Europe because the level of innovation orientation strengthens the ESG-innovation relations, which was consistent with the organizational culture mediating the efficacy of mechanisms concerning the institutional pressures. The competitive intensity is one of the conditions of the boundary where ESG could enhance competitiveness as in moderately competitive markets only green innovation could be used and no longer in the hypercompetitive markets because of the imitators and strategic positioning dynamics (Gao 2025).

The review of the article will focus on the evolutionary narrative of global innovation in 2015-2025, in particular, the interaction of digitization and ESG demands with supply chain dynamics. This synthesis will be based on 27 peer-reviewed articles and they will answer the three research questions: (1) How did the theoretical models evolve to explain ESG-innovation relations, particularly the institutional conformity to resource-based capability and synthesis paradox viewpoints? (2) Which transmission channels exist between the ESG performance and the result of innovation and which are the conditions of the boundary that moderate these relationships concerning ownership structures, industry factors, firm size and position in supply chain? (3) What are the implications of institutional contexts in the regions on divergent models of ESG-innovations and what is the current geographic concentration of research tell us about the generalisability of theories to practice?

As it is demonstrated, the asymmetries involved in the analysis are that downstream firms rely on ESG to enhance brand equity and innovation capacity, whereas upstream suppliers are exposed to pressure in their operations without the supporting resource provisions (Sun et al., 2025). We find four channels of transmission, that have been already put in place, they are financing channels, reduction of agency cost, promotion of stakeholder legitimacy and amplification of digital integration. Development in the theory occurs in institutional conformity frameworks focusing on the legitimacy seeking approach (Aldowaish et al., 2024) to resource-based capability frameworks (Fulop et al., 2025) to paradox based frameworks

that harmonize the profit and planet goals through synthesis strategies (Song and Ma, 2025). The institutional differences are in different institutional logics where the Chinese settings are oriented to the environmental pillars of the state-based based mechanisms (Tang et al., 2022) and ASEAN oriented to the social performance based on competitive market positioning (Tripopsakul, 2025). The review concludes with methodological limitations including endogeneity problems, measurement validity problems and geographic concentration and recommends future direction of research including multilevel theories, mixed methods designs and wider geographic coverage.

Methodology

The study utilizes an evolutionary narrative review approach in order to synthesize the body of literature about ESG and innovation. Narrative reviews are best at incorporating the various theoretical approaches and pinpointing new trends in new areas. This methodology is appropriate to our research aim due to the interdisciplinary character of the research of ESG-innovation, the necessity to track the theoretical development of the field in the 2015-2025 time span, and the heterogeneity of its methodologies across research studies. The search in literature was done in Web of Science, Scopus and in Google Scholar between September and November 2025. The search strategy included the Boolean operators of ESG terms, innovation terms, and performance terms but was restricted to peer-reviewed journal articles published during 2020-25 years of the English language. The first search provided 417 articles. Upon the elimination of duplicates, 254 articles proceeded to the title and abstract review. After the inclusion and exclusion criteria were used, 54 papers were proceeded to a full-text review. Assessment of quality based on modified Mixed Methods Appraisal Tool led to elimination of 27 research articles because of poor sample justification, endogeneity issues, imprecise measurement of constructs, or insufficient corresponding theoretical support. The remaining 27 studies were then kept to be synthesized.

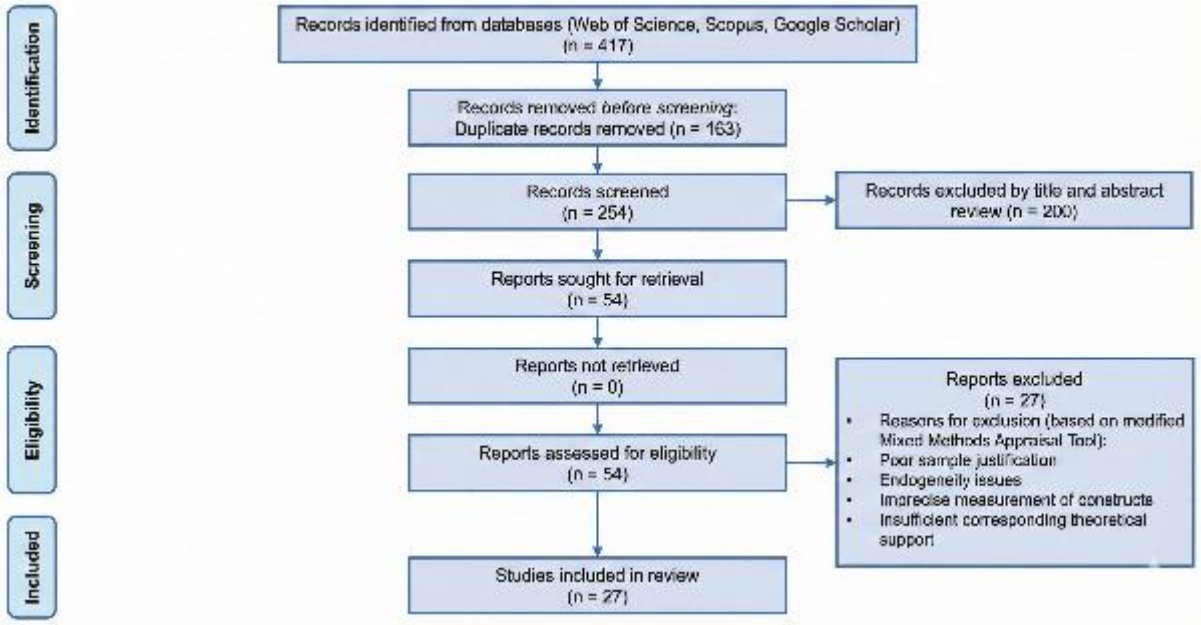

Figure 1. PRISMA Flow Diagram for Evolutionary Narrative Review of ESG and Innovation Literature

Information on data extraction was based on a systematic procedure, which entailed the recording of bibliometric data, study setting, theoretical background, methodology, measurement of constructs, key findings, mechanisms observed, and limitations. Independent extraction of data was done by two researchers on 30 percent of the studies with an inter-rater agreement of 92 percent. Thematic analysis was used by synthesis to find temporal patterns of evolution of theory, convergent and divergent empirical findings, contextual moderators and methodological trends. The narrative method implies the subjective choice and synthesis of studies. Positive relationships between ESG-innovation can be exaggerated by publication bias. Domination (67%) of Chinese studies restricts cross-cultural generalization as shown in Figure 3. The speed of the development of the field implies that the most recent working papers can be full of the latest insights that are yet to be reflected.

Theoretical and Empirical Synthesis

The past decade has been typified by the theoretical advances where classical economic formulations have been reworks to consider the non market strategies that are being required to make it sustainable. The initial period of around 2015-2018 can be defined as dominated by the discourse of Institutional Theory according to which green innovation was viewed as a means of compliance, as one that will ensure the achievement of legitimacy. Those companies welcomed the necessity to practice environmentally to follow the pressure of regulation, industry standards, and imitation of peers, thus, considering sustainability as a cost, but not competitive advantage. The shift in the perspective of the theoretical framework was to the Resource-Based View and Dynamic Capabilities perspectives. This change is justified in literature, since it suggests that ESG performance is an indicator of special organizational skills.

Tang, Wang, and Zhang (2022) provide a Chinese panel data evidence with reference to the listed firms that the high ESG performance level is a strategic asset alleviating external financing limitations and reducing agency costs in the company. As their comparison shows, higher ESG ratings are associated with low cost of financing and research and development level. It is the opposite of the assumptions of trade-offs and aligns with the interests of RBV in the intangible resources as the reasons of long-term competitive advantage. Sun and Xiong (2025) extend the same thought and establish innovation willingness, financing constraints, and human capital as three avenues through which ESG enhances innovation, and the most profound effects are displayed by the environmental dimension.

The injection of the Paradox Theory to sustainability is a move in the right direction to the second half of the decade. The profit and planet goals in paradox Theory are viewed as irreconcilable interdependence contradictions that must be worked through synthesis strategies rather than resolved through priority classification. The qualitative data of Ricoh Group provided by Aldowaish et al. (2024) show how firms can introduce synthesis strategies to reinvent environmental constraints as the origin of competitiveness. Song and Ma (2025) provide empirical evidence with references to the discovery of an inverted U-shape relationship between public attention and green innovation in heavy-polluting industries of China. One level of media criticism is moderate, and this creates a stress that will serve as a motivational factor to the companies to overcome the paradoxes through innovation. The stress levels lead to a depletion of the mental resources of the organization and the

emergence of the threat rigidity which leads to the self-defense mechanisms and the symbolic conformity rather than the real innovation.

There is heterogeneity of innovation, which has non-similar effects on ESG. Liu (2023) outlines the difference between substantial and strategic innovation (new-to-market and breakthrough technologies, and imitative products and incremental improvement, respectively). ESG is more influential in major innovation than strategic innovation. This finding means that the resources associated with ESG are invested in transformative, rather than cosmetic innovation. The industry characteristics soften the relationships. It is presented that the relationships between green innovation and public attention are inverted-U between heavy-polluted industries, and positive linear between clean industries (Song and Ma, 2025). The firm size has threshold effects whereby ESG-innovation benefits are realized when the big firm is endowed with the means to implement wide-ranging ESG systems. Mohy-ud-Din (2024) finds that US companies affirm the ESG-innovation relations with the support of board diversity. Gao (2025) says that the existence of a boundary condition that ESG enhances competitiveness by facilitating green innovation only exists in moderately competitive markets, and does not exist in hypercompetitive markets due to imitation and positioning. Table 1 is a summary of empirical research.

Table 1
Synthesis of Key Empirical Mechanisms

Study	Context	Mechanism	Finding
Tang et al. (2022)	China 2010-2019	Financing and agency costs	ESG reduces capital costs and increases R&D intensity
Liu (2023)	China 2007-2020	Innovation quality	Stronger effect on substantial vs. strategic innovation
Song & Ma (2025)	China 2013-2022	Public attention	Inverted-U: moderate enhances, extreme triggers rigidity
Sun et al. (2025)	China 2007-2022	Supply chain and AI	Downstream benefit; upstream insignificant; AI amplifies effects
Liu et al. (2024)	China 2009-2021	Innovation type	Radical and progressive both positive; financing weakens
Tripopsakul (2025)	ASEAN 2019-2023	Green innovation mediation	E&G drive innovation; S drives performance
Fülöp et al. (2025)	Romania SMEs	Innovation orientation	Environmental pillar strongest; orientation amplifies

Digital Transformation, Supply Chains, and Business Model Innovation

Global innovation has the aspect of multitier supply chains between the actor organizations. The move to sustainability has created forces that give room to work together innovatively and threats brought by the imbalance of power. It is the evidence of the supply chain asymmetry as offered by Sun et al. (2025) on the basis of the matched information about a supplier and a customer of the Chinese listed companies. Their two-way fixed effects models confirm that the ESG performance of downstream customer firms positively affect their own innovation ability but statistically insignificant affect innovation in their upstream suppliers. Such imbalance is a sign of power imbalances where the influential consumers are supposed to transfer the cost of environmental compliance to the suppliers and fail to provide any

compensating technical and financial support. Suppliers absorb cost rather than investing in innovation by absorbing costs at the price stage or making operation changes to the costs. The study acknowledges the application of the concept of artificial intelligence to act as an amplifying moderator where AI-enhanced supply chain visibility increases the effects of downstream innovations without any effect on the impact on the upstream.

A bibliometric analysis creates a digital-green nexus where sustainability and digital transformation cease to be parallel routes to go but are combined ways of innovations. Bachmann et al. (2025) review papers on data-driven sustainable business model innovation, which three archetypes, i.e. sensor-enabled circular models, Internet of Things-based product-as-a-service offerings, platform-mediated sharing models, network effect-based models, and predictive optimization models apply to deploying machine learning to resource efficiency. The review states that the manufacturing-related sustainable business model innovations are getting increasingly entangled with the digital technologies, which explains the acceleration in the convergence. The synthesis reveals that the digital platforms render business model innovations not restricted by the transaction costs, information asymmetries, and coordination complexities. Blockchain usage provides the opportunity to track sustainable supply chains. Artificial intelligence in smart buildings and manufacture allows using energy more effectively. Product monitoring can be achieved through the use of digital twins in facilitating the lifecycle-based business models of the circular economy. A conceptualisation of green innovation and digital transformation as a harmonious framework and not a separate strategic path, the bibliometrics mapping by Pan et al. (2023) comes to the theoretical convergence.

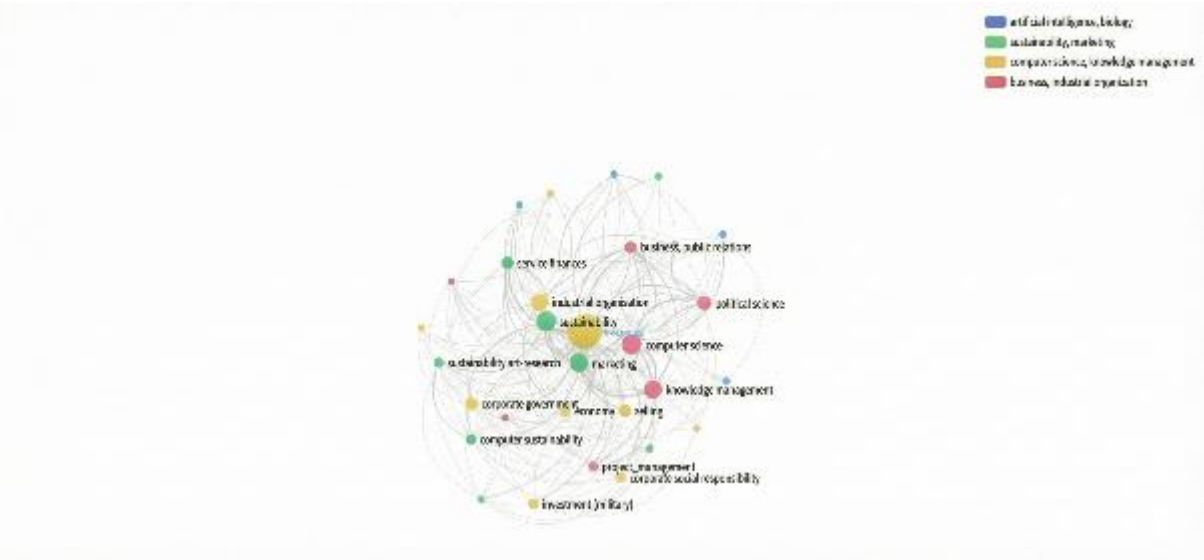

Figure 2. Keyword Co-occurrence Network Visualization: The ESG-Digital-Innovation Convergence

Note: The graphic representation is a network analysis of 27 reviewed studies that are thematically integrated. The size of the nodes reflects the frequency of the occurrence of a particular key word in the text whereas the edge thickness indicates the strength of co-occurrence of the concepts. It is divided into four major discipline clusters namely: (1) Artificial Intelligence and Technical Solutions (Blue), (2) Business and Industrial Organization (Red), (3) Sustainability and Marketing (Green), and (4) Computer Science and Knowledge

Management (Yellow). The main keywords of strategic bridges like Supply Chain and Stakeholder Theory are pointing to the key areas where the theoretical integration of ESG performance and innovation results is crucial.

The qualitative data that Jorzik et al. (2024) present, is in the form of green technology startups and isolates archetypes of AI-led sustainable business model innovation. The work lists that two out of three startups under analysis contain AI functionality (computer vision to sort waste, natural language processing to report on environmental sustainability, reinforcement learning to optimize energy usage) as core value propositions (vers side operational processes). Value creation mechanisms are automation of sustainability sustainability monitoring, making the compliance costs of sustainability cheaper, predictive analytics which allow environmental risks to be avoided proactively, and optimization algorithms which allow resources to be made more productive. Manotti et al. (2025) evaluate the New Space Economy through the prism of the technology affordance approach to sustainable business model innovation and differentiate between the affording of transparency (emissions monitoring), efficiency (precision agriculture), and democratization (access to climate information) affordances. The assessment framework that will enable the distinction between the actual sustainable business model innovation and the greenwashing is the analysis of value creation (economic viability), value delivery (stakeholder inclusiveness) and value capture (equitable distribution) (Juin et al., 2025). Li and Wu (2025) investigate the climate finance as the scheme of development of sustainable business model innovation in developing nations and find out that blended financial schemes of integrating the capital of the private sector with the guarantees of the public sector reduce the risk premiums of investment and allow the innovative ways in the renewable energy industry and in the climate-adaptation business.

Regional Dynamics and Geographic Concentration

The world has regional models that denote divergent institutional logics, regulatory frameworks and economic development models. The geographical analysis of the studies reviewed by the authors can be described by the impressive concentration: 18 out of 27 studies (67%), discuss the Chinese settings, 4 studies (15%), discuss the economies of the ASEAN region, 3 studies (11%), discuss the developed Western markets, and 2 studies (7%), discuss the emerging markets of Eastern Europe. This allocation undermines the theoretical generalization and translocation to institutional contexts. The geographic concentration is what shows the availability of data, biases in the publications, and the impact of the location of the researcher compared to proportionality in world processes of ESG-innovation or local institutional features of state-directed economies.

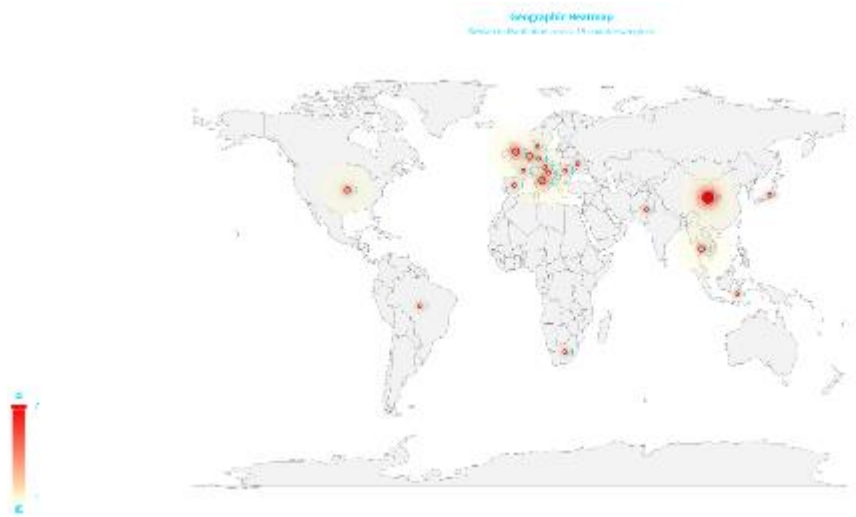

Figure 3. Geographic Distribution of Empirical Evidence on ESG and Innovation (2015-2025)

Note: Geographic concentration of heatmap of study by geography in 19 countries/regions. Size and redness of the circle are used to measure density of the study. China leads with 18 (67%), then comes ASEAN cluster (Thailand 2, Malaysia 1, regional 1), developed (US 2, Italy 1) and Eastern Europe (Romania 2). White areas are geographic fractures like Latin America, Africa, Middle East, and South Asia despite them also applying to the global sustainability concerns.

Chinese economic model is typified by dominance of state own business with political links, top down regulatory demands like dual carbon neutrality targets, and green finance guided by the government in which the preferred lending is taken. As it has been mentioned in the studies by Tang et al. (2022) and Wu et al. (2024), the acquisition of disproportional benefits of ESG-innovation by Chinese SOEs is fostered by the institutional support. Political contacts with local governments are one way to access subsidized credit, laxity in environmental regulation, and green innovation contracts. The theoretical reasoning is similar to the Institutional Theory in which companies are motivated by ESG as a measure of legitimacy and regulatory adherence instead of a competitive advantage that is inherently based on the market. The dominance is with environmental pillar focusing on the reduction of pollution and carbon emissions that show the priorities of the state. The type of innovation is biased towards process innovation (cleaner production, pollution control) as opposed to product innovation which is a manufacturing base and export oriented country. Ownership structure opens divergent ways in which SOEs take advantage of their political resources and the private firms through the market mechanisms. The funding is based on the government-driven processes such as the presence of subsidies, tax preferences, and the policy bank lending on a below-market rate. The innovation of green technology mediates between the ESG and firm performance in the Chinese manufacturing industry, justifying the views to the corporate reputation as another mediator, confirming reputational motives complement regulatory compliance, as presented by Chen et al. (2024).

According to Tripopsakul (2025), the evidence submitted to ASEAN is that social disclosure scores have a greater impact on financial performance compared to the environmental score, which suggests the integration of the region, in which Western brands subject labor standards to scrutiny. This is contrary to the environmental pillar superiority in China. Economies of

ASEAN are characterized by market-based ESG drivers whereby the requirements of multinational buyers, requirements of international investors, and export markets are the drivers of adopting sustainability. Theoretical rationale is based on Resource-Based View in which companies are driven by the need to seek competitive edge and positioning in the market but not because of regulatory requirements. The priority of the social pillar is focused on labor rights and working conditions based on manufacturing industry and services export orientation. Innovation type focuses on product innovation by eco-design and green certifications that win the high-end markets. Ownership effect focuses on the private SMEs which are more of entrepreneurial flexibility as opposed to state owned enterprises. The financing is based on market-based solutions such as international investors and ESG-based mandate loans, sustainability-related loans. Fulop et al. (2025) add Eastern European background of Romanian SMEs who discovered that innovation orientation reinforces ESG-innovation connections. The investigation records that active innovation posture companies have better returns on ESG investments than active adopters, indicating that organization culture moderates the effectiveness of the mechanisms. A comparative analysis of China and ASEAN models is given in table 2.

Table 2
Comparative Analysis of Regional Innovation Models

Dimension	China Model	ASEAN Model	Literature Support
ESG Driver	Government regulation; dual carbon targets; green finance mandates	Global supply chain integration; multinational buyer requirements	Tang et al. (2022); Wu et al. (2024); Tripopsakul (2025)
Theoretical Logic	Institutional Theory: legitimacy-seeking, regulatory compliance	Resource-Based View: competitive advantage, market positioning	Liu et al. (2024); Fülöp et al. (2025); Tripopsakul (2025)
Pillar Priority	Environmental: pollution reduction, carbon emissions	Social: labor rights, working conditions	Tripopsakul (2025); Song & Ma (2025); Chen et al. (2024)
Innovation Type	Process innovation: cleaner production, pollution control	Product innovation: eco-design, green certifications	Liu (2023); Gao (2025); Fülöp et al. (2025)
Ownership Effect	SOEs capture disproportionate benefits via government backing	Private SMEs central with entrepreneurial flexibility	Wu et al. (2024); Tang et al. (2022); Tripopsakul (2025)
Financing	Government-directed: preferential lending, subsidies	Market-based: international investors with ESG mandates	EconJournals (2024); Tripopsakul (2025)

Discussion and Future Directions

The methodological homogeneity as per the literature is that the 21 out of 27 studies use the methods of panel regression with fixed effects models, 3 studies use the methods of structural equation modeling, 2 studies use the methods of qualitative case study, and 1 study use the methods of bibliometric analysis. The advantages of panel regression are that: the researcher can control unobserved firm heterogeneity as well as time variation, make causal inference, attain statistical power through large samples of 5-10 years and test robustness through the exploitation of instruments and propensity score matching. Tang et al. (2022) demonstrate the methodological rigor of using two-way fixed effects, testing of mediation

mechanisms, heterogeneity, research using lagged independent variables, and instrumental variables.

The weaknesses that are systematic are exposed. The two way causality is possible since innovative firms can invest more in ESG or that ESG and innovation can be motivated by factors that cannot be observed. It is only in 8 of 21 quantitative studies that the instruments or natural experiment are employed. There is a measurement of validity where, the studies consider heterogeneous ESG rating providers, which are low in inter-rater reliability and proprietary methodology. Composite ESG scores are used to mask the variation present in dimensions whose sub-dimensional impact varies. Measurement of innovation has been too dependent on the number of patents without taking into account the fact that not all innovations are patented, and also different industries have varying propensity of patenting innovations. Most of the studies do 5-10 year panel studies and employ statical model in which the effects of ESG are held constant without taking the longitudinal dynamics into consideration. Common method variance is likely in a cross-sectional survey research. Quantitative research designs make possible macro-level processes albeit fail to illuminate the perceptions that organizational actors hold about ESG pressures. We have no mixed methods designs that involve quantitative breadth and qualitative depth.

The reviewed literature is geographically, sectorally focused and has low generalizability. The dynamics of ESG-innovation in the knowledge-intensive sector of the economy is not well studied in other contexts other than manufacturing. The professional service firms have different sustainability challenges whereby human capital is the primary resource (Massaro et al., 2020; Powers et al., 2022), and the intermediation of innovations systems varied among the various types of consultants (Williams and van Triest, 2023; Parasuraman et al., 2024). In comparison to large corporations, resource constraints and institutional pressures are specific to SMEs (Utaminingsih et al., 2023), and sustainability and innovation relations in a service setup are mediated by absorptive capacity (Adu-Yeboah et al., 2023). The future research must conduct cross sectoral comparisons between manufacturing, service sectors and SMEs in order to come up with context contingent theories.

The authors, in most of the works, use the Institutional Theory, Resource-Based View, Stakeholder Theory and the Agency Theory. It is superficial in the case of theoretical integration, when literature reviews cite studies in which frameworks are mentioned, but rarely are they trying to formulate any theoretical propositions or to generate predictions that are competitive. There is one exception that is the study of Aldowaish et al. (2024) who apply the Paradox Theory, and the one of Song and Ma (2025) who apply the theory of threat rigidity. Examples of the outstanding research directions include comparative research across institutional settings with matched designs, extending the scope of empirical research beyond Chinese samples into Latin America, Africa, and South Asia, mixed methods research designs to incorporate the breadth of quantitative and the depth of qualitative, better measurements to capture the quality of innovations and ESG authenticity, multilevel theories to incorporate the macro-institutional demands and meso-organizational capacity and micro-individual cognitions, digital-ESG convergence, greenwashing, and the use of digital-based gaming as innovations, and dynamics of service sectors

Conclusion

It is revealed in this review that the period between 2015 and 2025 has rewritten the concept of global innovation in which ESG has ceased being a mere compulsory requirement to become an element of strategy. The discussion shows the theoretical development of the institutional conformity perspectives focusing on legitimacy-seeking to resource based capability perspectives focusing on competitive advantage to paradox based frameworks focusing on synthesis strategies. Four transmission mechanisms are legitimized: financing channels, agency cost decrease, stakeholder legitimacy improvement, and amplification of the digital integration. These relationships such as ownership structure whereby state-owned enterprises receive disproportionate benefits, industry, firm size, supply chain position where downstream firms receive the innovation benefits and the upstream suppliers bear compliance costs, and public attention intensity are moderate with inverted-U relationships. Theorical generalizability cannot be applied because the geographic concentration includes a large majority of studies discussing the Chinese institutional contexts. In methodology, there is preeminence of panel regression methods with tests of robustness, but questions of endogeneity are still real, measurement validity is also an issue with heterogeneous ESG ratings and innovation proxies based on patents, temporal dynamics remain underrepresented, and micro-mechanisms are black-boxed. The innovation capacity to be sustainable will be the indicator of resilience in organizations under the condition of fusion of digital intelligence, transparency in governance, and social responsibility.

References

Adu-Yeboah, S. S., Jiang, Y., Frempong, M. F., Hossin, M. A., & Amoako, R. (2023). Corporate sustainability and service innovation: Moderating role of absorptive capacity. *South African Journal of Business Management*, *54*(1), a2885. https://doi.org/10.4102/sajbm.v54i1.2885

Aldowaish, A., Kokuryo, J., Almazyad, O., & Goi, H. C. (2024). How to manage conflicts in the process of ESG integration: The role of governance and innovation. *Sustainability*, *16*(8), 3391. https://doi.org/10.3390/su16083391

Bachmann, N., Tripathi, S., Brunner, M., & Jodlbauer, H. (2025). Driving sustainable innovation: A review of data-driven approaches to sustainable business model innovation. *Business Strategy and the Environment*. https://doi.org/10.1002/bse.70182

Chen, X., Lakkanawanit, P., Suttipun, M., Swatdikun, T., & Huang, S.-Z. (2024). Green technology innovation and corporate reputation: Key drivers of ESG and firm performance. *Emerging Science Journal*, *8*(6), 2501-2518. https://doi.org/10.28991/ESJ-2024-08-06-021

EconJournals. (2024). Influence of ESG on sustainability reporting: The mediating role of green innovation and investor sentiment. *International Journal of Energy Economics and Policy*. https://doi.org/10.32479/ijeep.14988

Fülöp, M. T., Breaz, T. O., He, X., Ionescu, S. A., Cordoş, A. A., & Stanescu, S. G. (2025). Do ESG strategies drive green innovation in emerging markets? *Business Strategy and the Environment*. https://doi.org/10.1002/bse.70296

Gao, X. (2025). ESG performance and corporate competitiveness: The roles of green innovation. *Jurnal Statistik Malaysia*, *2025*(1). https://ilsm.dosm.gov.my/uploads/files/JURNAL%20STATISTIK%202025/BILL%2012%202025/ESG%20performance%20and%20corporate.pdf

Jorzik, P., Kanbach, D. K., Kraus, S., Mikalef, P., & Kaartemo, V. (2024). Sowing the seeds for sustainability: A business model innovation perspective on artificial intelligence in green technology start-ups. *Technological Forecasting and Social Change*, *199*, 122020. https://doi.org/10.1016/j.techfore.2024.123653

Juin, C., Georget, V., & Rayna, T. (2025). Business model innovation: A framework for assessing corporate engagement with sustainability. *Circular Economy and Sustainability*. https://doi.org/10.1007/s43615-025-00565-9

Li, W., & Wu, D. (2025). Sustainability through business model innovation and climate finance in developing countries. *Humanities and Social Sciences Communications*, *12*, 66. https://doi.org/10.1057/s41599-024-04297-3

Liu, X. (2023). The influence of ESG performance on corporate innovation strategy. *SHS Web of Conferences*, *154*, 02008. https://doi.org/10.1051/shsconf/202315402008

Liu, X., Huang, N., Su, W., & Zhou, H. (2024). Green innovation and corporate ESG performance: Evidence from Chinese listed companies. *International Review of Economics & Finance*, *95*, 103461. https://doi.org/10.1016/j.iref.2024.103461

Manotti, J., Sanasi, S., & Ghezzi, A. (2025). Sustainable business model innovation: A technology affordance perspective in the New Space Economy. *Technovation*, *143*, 103226. https://doi.org/10.1016/j.technovation.2025.103226

Massaro, M., Bagnoli, C., & Dal Mas, F. (2020). The role of human sustainability in professional service firms: Evidence from Italy. *Business Strategy and the Environment*, *29*(6), 2668-2678. https://doi.org/10.1002/bse.2528

Mohy-ud-Din, K. (2024). ESG reporting, corporate green innovation and interaction role of board diversity: A new insight from US. *Innovation and Green Development*, *3*(4), 100161. https://doi.org/10.1016/j.igd.2024.100161

Pan, L., Xu, Z., & Skare, M. (2023). Sustainable business model innovation literature: A bibliometrics analysis. *Review of Managerial Science*, *17*, 757-785. https://doi.org/10.1007/s11846-022-00548-2

Parasuraman, B., Hanafi, N. M. H., Yaccob, M. R., & Dara, N. (2024). Entrepreneurial intention, growth and sustainability among professional service firms: A general overview. *Journal of Economic and Social Studies*. https://doi.org/10.52783/jes.3270

Powers, S. R., Gazica, M. W., & Myers, K. K. (2022). Emotional communication and human sustainability in professional service firms (PSFs). *Sustainability*, *14*(7), 4054. https://doi.org/10.3390/su14074054

Rosati, F., Moiso, E., & Dimitrova, M. (2023). Business model innovation for the Sustainable Development Goals. *Business Strategy and the Environment*, *32*(4), 1721-1738. https://doi.org/10.1002/bse.3334

Song, C., & Ma, W. (2025). ESG and green innovation: Nonlinear moderation of public attention. *Humanities and Social Sciences Communications*, *12*, Article 52. https://doi.org/10.1057/s41599-025-05002-8

Sun, X., & Xiong, X. (2025). ESG performance and corporate innovation. *Research in International Business and Finance*, *76*, 102817. https://doi.org/10.1016/j.ribaf.2025.102817

Sun, Y., Luo, D., Tao, L., Sheng, J., & Ma, C. (2025). The asymmetric influence of ESG performance on corporate innovation: Understanding the role of supply chain transmission. *Humanities and Social Sciences Communications*, *12*, 1735. https://doi.org/10.1057/s41599-025-06005-1

Tang, H., Wang, L., & Zhang, Y. (2022). The effect of ESG performance on corporate innovation in China: The mediating role of financial constraints and agency cost. *Sustainability*, *14*(7), 3769. https://doi.org/10.3390/su14073769

Tripopsakul, S. (2025). ESG practices, green innovation, and financial performance: Panel evidence from ASEAN firms. *Journal of Risk and Financial Management*, *18*(8), 467. https://doi.org/10.3390/jrfm18080467

Utaminingsih, A., Widowati, S. Y., & Witjaksono, E. H. (2023). Sustainable business model innovation: External and internal factors on SMEs. *International Journal of Innovation Science*, *16*(3), 599-616. https://doi.org/10.1108/IJIS-08-2022-0153

Williams, C., & van Triest, S. (2023). Understanding performance in professional services for innovation intermediation: Technology consultants vs. management consultants. *Technovation*, *126*, 102824. https://doi.org/10.1016/j.technovation.2023.102824

Wu, L., Yi, X., Hu, K., Lyulyov, O., & Pimonenko, T. (2024). The effect of ESG performance on corporate green innovation. *Business Process Management Journal*, *30*(8), 24-48. https://doi.org/10.1108/BPMJ-04-2023-0237