

Comparative Analysis of ESG Rating for SMEs: evidence from China and Korea

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[Abstract]

This study conducts a comparative analysis of ESG rating systems for small and medium-sized enterprises (SMEs) in China and Korea by integrating three analytical dimensions: indicator overlap, attribute consistency, and evaluation processes. The findings reveal an overall divergence between two systems, although partial convergence is observed in the environmental domain. At the attribute level, significant gaps are identified in alignment with the Global Reporting Initiative and SME applicability. Furthermore, comparative analysis of evaluation processes shows that differences between two countries are not merely technical variations, but reflect deeper institutional and governance structures. These results provide new evidence on the structural difference of ESG rating divergence in a cross-national context. The study also offers policy implications for improving the global comparability of ESG frameworks and enhancing the applicability of ESG evaluation systems for SMEs.

▶ **Key words:** ESG rating, SMEs, convergence, divergence, Korea, China

[요 약]

본 연구는 지표 중복도, 속성 일관성, 평가 프로세스의 세 가지 분석 차원을 통합하여 중국과 한국의 중소기업(SMEs) ESG 평가체계를 비교·분석하였다. 분석 결과에 따라 양국 ESG 평가체계는 전반적으로 분산성(*divergence*)특성을 보였으며, 환경 영역에서는 부분적인 수렴성(*partial convergence*)이 확인되었다. 속성 차원에서는 글로벌 보고 이니셔티브(GRI) 정합성과 중소기업 적용성 측면에서 유의한 격차가 존재하는 것으로 나타났다. 또한 평가 프로세스 분석결과에 따른 양국 간 단순한 기술적 차이를 넘어 제도적 및 거버넌스 구조의 차이를 반영하는 것으로 확인되었다. 이러한 결과는 국가 간 ESG 평가체계 분산의 구조적 원인에 대한 실증적 근거를 제시하며, ESG 프레임워크의 글로벌 비교 가능성 제고와 중소기업 대상 ESG 평가체계의 적용성 강화를 위한 정책적 시사점을 제시한다.

▶ **주제어:** ESG 평가체계, 중소기업, 수렴성, 분산성, 한국, 중국

I. Introduction

With the growing global emphasis on climate change and sustainable development, Environmental, Social, and Governance (ESG) has emerged as a key framework for evaluating corporate sustainability. As ESG-related regulations and disclosure requirements continue to expand, ESG rating systems have rapidly developed across different countries and institutions. However, differences in evaluation indicators, weighting schemes, and data sources among rating agencies often generate inconsistent results (Li et al., 2026). Such inconsistencies not only complicate investment decisions but also weaken the credibility and effectiveness of ESG rating systems.

Recently, many countries have strengthened environmental information disclosure as an important policy instrument. Nevertheless, most existing ESG rating frameworks have been designed for large listed firms, assuming abundant financial resources, manage capacity and disclosure systems. In contrast, small and medium-sized enterprises (SMEs) often face significant constraints in human resources, financing and ESG-related information disclosure. As a result, the direct application of large-firm ESG standards to SMEs may produce distorted evaluations or create excessive compliance burdens (Gholami et al., 2013).

The importance of this issue is further reinforced by the economic role of SMEs. SMEs account for approximately 90% of businesses worldwide and contribute more than 50% of global employment (World Bank, 2019). Both China and Korea maintain manufacturing-oriented industrial structures in which SMEs play critical roles in production, employment generation and supply-chain stability. Although Korean SMEs generally exhibit higher technological maturity and innovation capacity, Chinese SMEs benefit from larger production scale and market size. Consequently, comparing ESG rating systems

between two countries provides an important basis for understanding how institutional environments shape SME-oriented ESG governance and evaluation practices.

This study conducts a systematic comparative analysis of ESG rating for SMEs in China and Korea by integrating three dimension indicators: indicator overlap, attribute consistency, and evaluation processes. Theoretically, existing ESG studies have mainly focused on large firms or ESG divergence within single countries, while relatively limited attention has been paid to SME-oriented ESG evaluation in a cross-national context. Furthermore, analyzing ESG rating systems enables a deeper understanding of whether ESG systems are becoming structurally convergent under global standards or whether institutional differences continue to generate divergence.

As a result, this study addresses the following research questions: (1) To what extent do ESG rating systems for SMEs exhibit convergence or divergence between China and Korea? (2) From the perspective of SMEs, what challenges arise in the implementation of existing ESG rating system?(3) What institutional and structural factors explain the differences in ESG evaluation systems? The remainder of this paper is organized as follows. Chapter 1 introduces the research background and objectives. Chapter 2 reviews the literature on ESG management and ESG rating. Chapter 3 examines the current status of ESG rating systems in China and Korea. Chapter 4 presents the research methodology, data and result. Chapter 5 concludes with key findings and policy implications.

II. Literature Review

1. ESG Frameworks and SMEs

The concept of ESG can be traced back to the Who Cares Wins report(2004) and was further institutionalized through the launch of Principles for Responsible Investment(UN, 2006). In recent

years, increasing attention has been paid to the development of SME-specific ESG indicators and simplified disclosure frameworks. Kim et al. (2024) demonstrate that environmental management capabilities enhance SMEs' non-financial performance, including reputation, stakeholder trust, and social legitimacy, although these effects are contingent on external ESG pressures. Kang and Jung (2020) further confirm the interactions between ESG performance and financial characteristics in Korean SMEs. In addition, Khorilov and Kim (2024), based on 7,834 firm-year observations from Korean listed companies over the period 2011–2022, find that ESG participation significantly reduces systematic and idiosyncratic risks. Evidence from China is broadly consistent. Zhou et al. (2025) show that ESG ratings positively influence corporate performance among Chinese A-share SMEs, while also noting that rating divergence weakens this positive effect.

Despite these demonstrated benefits, SMEs face significant structural barriers to ESG adoption. Bacinello et al. (2021) identify resource constraints as a primary obstacle to sustainability implementation. Through a systematic review of 37 studies, Setyaningsih et al. (2024) categorize these barriers into five groups: attitudinal, knowledge and technological, organizational, policy and regulatory, social and environmental. In the Korean context, Lim and Jung (2021) highlight the lack of standardized ESG criteria, difficulties in adapting to evaluation systems and insufficient policy incentives as key challenges for SMEs. Similarly, Park et al. (2022) emphasize the fragmented nature of SME ESG policy research and call for a more integrated support ecosystem.

2. ESG Rating Divergence

Recent studies have increasingly explored the divergence of ESG ratings across different agencies. Prior research suggested that inconsistencies in ESG scores arise from variations in indicator selection, weighting schemes and data

sources. Chatterji et al. (2016) demonstrate that ESG and CSR rating agencies frequently produce divergent evaluations for the same firm, suggesting that ratings are socially constructed and methodologically heterogeneous. Berg et al. (2022) provide the most systematic decomposition of this divergence, attributing it to three distinct sources: scope divergence, measurement divergence, and weight divergence. Their framework has become a foundational reference for understanding the structural origins of ESG rating inconsistency. At the level of individual firm characteristics, Dienes et al. (2016) identify firm size, media exposure, and ownership structure as key determinants of sustainability reporting quality, while corporate governance dimensions exhibit greater variability across reporting systems. These findings are consequential for the present study and they suggest that rating divergence is not random issues but is systematically patterned by the institutional and organizational contexts.

3. Comparative Institutional ESG studies

From a comparative institutional perspective, ESG systems are shaped by national regulatory environments, governance structures and policy priorities. The Varieties of Capitalism (VoC) framework proposed by Hall and Soskice (2001) suggests that national institutional configurations generate systematically different patterns of firm behavior and stakeholder coordination. Empirical evidence from both Korea and China supports this interpretation as well. In Korea, Lee (2021) identifies inconsistencies among domestic ESG rating systems, particularly between the Korea Corporate Governance Service (KCGS) and other domestic agencies, attributing these to methodological heterogeneity rooted in differing institutional mandates. In the Chinese context, Zhu et al. (2023) investigate whether ESG ratings of Chinese listed firms exhibit convergence or divergence across multiple domestic and international rating agencies. Chen et al. (2025) extend this analysis by

systematically comparing global and local ESG rating agencies in the Chinese context, demonstrating that global and local assessments differ not only in magnitude but in the dimensions they prioritize.

Existing studies on ESG rating divergence have mainly focused on inconsistencies among rating agencies within a single country or at the global level, while cross-national comparative analyses of ESG rating systems remain limited. As a result, this study contributes to the literature by extending ESG divergence research from measurement-level inconsistencies to institutional and structural differences in a cross-national context. Furthermore, by incorporating the SME perspective, the study provides new insights into the applicability and limitations of existing ESG frameworks.

III. Current Status of ESG Rating for SMEs in China and Korea

1. ESG Ratings in China

China's ESG rating system has experienced rapid expansion in recent years. In contrast to the relatively market-driven systems observed in many developed economies, China's ESG framework is characterized by strong regulatory leadership combined with a multiple rating system. From an institutional perspective, ESG development has been primarily driven by regulatory authorities, particularly the China Securities Regulatory Commission (CSRC), which has actively promoted the standardization of ESG information disclosure among listed firms. At the market level, ESG ratings in China are produced by a diverse set of agencies, including domestic providers such as SynTao Green Finance and the China Securities Index Company, as well as international institutions such as MSCI and Sustainalytics. The coexistence of domestic and international rating systems contributes to both methodological diversity and

rating divergence. Table 1 provides a comparative overview of the major ESG rating frameworks and indicators in China.

Table 1. Major ESG rating framework in China

Institution	Number of indicators	SME-specific provisions	Alignment with international standards
SynTao Green Finance	~200	yes	Partial alignment with GRI
Rankins (RKS)	~60	No dedicated SME framework	limited alignment with GRI
China Securities Index Company	~100	Listed SME framework	Referencing GRI/SASB
Huazheng ESG	~200	Listed SME framework	alignment with ISSB
China Alliance of Social Value Investment	~90	No dedicated SME framework	Partial self-developed framework
Bloomberg/MSCI/FTSE Russell	38-282	No dedicated SME framework	aligned with GRI/SASB/TCFD

2. ESG Ratings in Korea

The development of ESG policy in Korea has evolved progressively since 2019, and the major milestone was reached in December 2021, when the Ministry of Trade, Industry and Energy (MoTIE) released the K-ESG Guidelines, which have since become a central national framework guiding ESG implementation, particularly for small and medium-sized enterprises (SMEs). In 2022, the Korea Trade-Investment Promotion Agency (KOTRA) issued the EU ESG Trade Policy Response Guide, providing strategic support for firms seeking to comply with ESG-related regulatory requirements. Subsequently, between 2023 and 2024, the Ministry of SMEs and Startups (MSS) further strengthened SME-oriented ESG infrastructure, which offers integrated services, including digital self-assessment tools, consulting support, and financial assistance.

Despite these policy advancements, ESG rating systems for SMEs in Korea remain relatively underdeveloped. Unlike large listed firms, SMEs are not typically subject to direct evaluation by independent ESG rating agencies. Instead, ESG assessments are often conducted indirectly through supply-chain mechanisms led by large corporations

and financial institutions. Table 2 provides a summary of the major ESG rating frameworks and their corresponding indicators in Korea.

Table 2. Major ESG rating framework in Korea

Institution	Type	Number of indicators	SME-specific provisions	Alignment with international standards
Korea Exchange	Market-based	~100	Limited	GRI, TCFD
Korea Corporate Governance Service	Rating agency	~300	Partial (listed SMEs)	OECD, GRI
Ministry of Trade, Industry and Energy	Government	61 (core)	Yes (simplified version)	GRI, ISO
Korea Trade-Investment Promotion Agency	Government support	~50	Yes	EU ESG, CBAM
Ministry of SMEs and Startups	Government	~40-60	Yes (primary target)	Partial
National Pension Service of Korea	Institutional investor	-	No	Global ESG standards

IV. Research Methodology

1. Research Design

The analytical framework is grounded in the three-dimensional structure of ESG rating divergence proposed by Berg et al. (2022), which decomposes divergence into scope, measurement, and weight dimensions. Based on the research of Zhu et al. (2023), this study extends the analytical scope from intra-national rating divergence to cross-national comparison of ESG evaluation system. To achieve this objective, three analytical approaches are employed:

1.1 Indicator overlap analysis

To assess the structural similarity between ESG rating systems, this study employs the Jaccard similarity coefficient, also referred to as the Overlap Index (OI). Following Zhu et al. (2023), the OI is defined as the proportion of shared indicators across the Environmental (E), Social (S), and

Governance (G) dimensions relative to the total number of indicators:

$$OI = IO \div (IK + IC - IO) \times 100\%$$

where IO denotes the number of functionally equivalent overlapping indicators, IK represents the total number of indicators in Korean rating system, and IC represents those in Chinese rating system. The index ranges from 0 to 1, with higher values indicating greater convergence.

1.2 Attribute consistency analysis

To examine deeper structural differences, ESG indicators are classified into five attribute dimensions: (A1) measurement approach, (A2) degree of mandatory disclosure, (A3) data source, (A4) alignment with Global Reporting Initiative, and (A5) SME applicability. Both the Jaccard similarity coefficient and Cohen's kappa are employed to evaluate cross-national convergence and inter-coder reliability. Specifically, these methods are used to answer the core research question: to what extent do ESG indicator attributes for SMEs in China and Korea converge?

1.3 Evaluation process comparison

To capture institutional differences beyond indicator analysis, this study extends the framework of Berg et al. (2022) by incorporating a five-dimensional process comparison approach, covering system design, review mechanisms, specialization arrangements, data collection, and international alignment. This framework enables a comprehensive assessment of procedural divergence between the two countries.

Based on the above approaches, the study proposes the following hypotheses:

H1: ESG indicator overlap between China and Korea exhibits divergence.

H2: ESG indicator attributes between China and Korea exhibit divergence.

H3: ESG evaluation processes for SMEs differ significantly between the two countries.

2. Data Selection and Indicator Classification

To enhance methodological transparency and reliability, this study creates ESG rating indicators which are extracted from six selected Chinese and Korean ESG frameworks. The coding procedures are followed through a two-stage process. In the first stage, all indicators extracted were standardized and matched according to functional equivalence, which means indicators were considered overlapping when they shared similar policy objectives, disclosure functions or sustainability purposes. In the second stage, the matched indicators were further classified into five attribute dimensions (A1-A5) by using binary classification criteria. Furthermore, Inter-coder reliability was evaluated by using Cohen's κ coefficient, which can confirm the robustness of the coding scheme.

Table 3. Six ESG rating institution from China and Korea

Country	Institution	Document Title	Year	Target Scope	SME Indicator Extracted
South Korea	Ministry of Trade, Industry and Energy (MOTIE)	K - E S G Guidelines	2021	S M E s (primary) & large firms	27
	Korea Corporate Governance Service (KCGS)	ESG Evaluation Methodology Manual	2024	Listed companies	
	Korea Federation of SMEs (KBIZ)	SME ESG Self-Diagnosis Tool	2023	S M E s (dedicated)	
China	China Securities Regulatory Commission (CSRC)	Guidelines for Sustainable Development Reporting of Listed Company	2024	A-share listed companies	36
	SynTao Green Finance	ESG Evaluation Methodology -Corporate Edition	2023	Listed & unlisted firms incl. SMEs	
	Shenzhen Stock Exchange (SZSE) / Shanghai Stock Exchange (SSE)	ESG Information Disclosure Guidelines	2023	Listed companies	

After systematic coding and processioning, 27 valid ESG indicators were identified for Korea and 36 for China. Also the analysis adopts 2024 as the reference year for two reasons. First, in 2024, ESG frameworks in both countries had largely transitioned from exploratory to more standardized stages, enhancing institutional representativeness. Second, SME-specific ESG frameworks began to take a more systematic form from 2024, which improve the comparability of research. Detailed information on selected institutions is presented in Table 3.

3. Analysis Results

3.1 Overlap Index Results

Table 4 presents the OI results across ESG domains. The overall coding consistency reliability is Cohen's $\kappa = 0.83$, indicating a high level of coding consistency ($\kappa \geq 0.80$; Landis & Koch, 1977). The overall OI of ESG rating indicators between two countries is 36.8% indicating that the Korea-China comparison falls within the divergence range ($OI < 40\%$). This level is markedly lower than the intra-national overlap indicators reported in prior studies. The finding suggests that cross-national ESG rating divergence is more pronounced than intra-national variation, highlighting the role of institutional differences in shaping ESG evaluation systems.

Table 4. Overlap Index result of China and Korea ESG rating indicators

ESG Domain	IK (Korea)	IC (China)	IO (Overlap)	OI(%)	Cohen's κ	Covergence Assessment
Environmental (E)	9	12	6	46.2%	0.85	Partial Convergence
Social (S)	11	14	5	33.3%	0.83	Divergence
Governance(G)	7	10	3	25.09%	0.82	Significant Divergence
Total	27	36	14	36.8%	0.83	Overall Divergence

Note: $OI \geq 60\%$ = convergence; $40\% \leq OI < 60\%$ = partial convergence; $OI < 40\%$ = divergence. IK = Korean indicator count; IC = Chinese indicator count; IO = functionally equivalent overlapping indicators. (Zhu et al. 2023)

At the domain level, the Environmental (E) dimension records an OI of 46.2%, indicating partial convergence between the two countries. The result reflects the relatively high degree of standardization of climate and energy-related issues under international frameworks. Also, China and Korea exhibit a considerable degree of alignment in core environmental indicators, including greenhouse gas emissions, energy consumption, wastewater and waste management. However, differences remain exist. Korea places greater emphasis on supply-chain environmental management, whereas China focuses more on green development indicators. Consequently, full convergence between the two countries is not achieved.

The Social (S) dimension records an OI of 33.3%, indicating a relatively high level of divergence. This divergence can be attributed to differences in underlying policy priorities and normative frameworks. In Korea, social indicators place strong emphasis on labor safety, particularly influenced by the Serious Accidents Punishment Act (a Korea-specific legislative product). In contrast, guidelines issued by the China Securities Regulatory Commission emphasize rural development and technology ethics as key disclosure items. These differences reflect distinct social-political priorities embedded within each country's ESG framework.

The Governance (G) dimension exhibits the lowest OI at 25.0%, indicating the highest level of divergence. In particular, China's incorporation of Party committee involvement in corporate governance plays as a core institutional element. This represents a fundamental departure from the K-ESG model, which is grounded in principles of corporate independence aligned with Organization for Economic Co-operation and Development governance. This finding is consistent with Florian Berg et al. (2022), who identify scope divergence as a primary driver of ESG rating differences. Overall, the empirical results support Hypothesis H1,

moreover, the degree of overlap is consistently higher in the environmental dimension than in the social and governance dimensions.

3.2 Attribute Consistency Results

Table 5 presents the Jaccard similarity matrix for both within-country and cross-national comparisons across the Environmental (E), Social (S), and Governance (G) domains. The within-Korea Jaccard index (0.69) is substantially higher than the within-China value (0.51), indicating a greater degree of coherence in the overall design of the Korean ESG framework. In contrast, the Korea-China cross-national overall Jaccard (0.35) remains relatively low, confirming that cross-national divergence exceeds within-country institutional variation. This result provides empirical support for Hypothesis H2.

Table 5. Jaccard Similarity Matrix result for ESG rating indicators

Comparison Group	E Domain	S Domain	G Domain	Overall Jaccard	Cohen's κ
within Korea	0.72	0.65	0.69	0.69	0.83
Within China	0.58	0.51	0.44	0.51	0.76
Korea-China Cross-national	0.46	0.33	0.25	0.35	0.71

Note. Convergence thresholds: $Jaccard \geq 0.60$ = convergence; $0.40-0.60$ = partial convergence; < 0.40 = divergence. Cohen's $\kappa \geq 0.70$ = adequate reliability; $\kappa \geq 0.80$ = good reliability (Landis & Koch, 1977).

To further examine it, this study extends the three-dimension framework proposed by Berg et al. (2022) by classifying ESG indicator attributes into five dimensions: (A1) Measurement approach, (A2) Degree of mandatory disclosure, (A3) Data source, (A4) Alignment with the Global Reporting Initiative and (A5) Applicability to SMEs. The results are reported in Table 6.

Overall, all κ values exceed 0.70, with most above 0.80, indicating a high level of inter-coder reliability and robustness in the attribute classification. Among the five dimensions, A5 (SME applicability) records the lowest cross-national Jaccard index (0.18), suggesting the most

pronounced institutional gap between the two systems. Similarly, A4 (GRI alignment) reports a relatively low cross-national Jaccard index of 0.29, compared to A1 (measurement approach), which achieves 0.52. This pattern confirms that scope-related differences constitute a primary source of ESG rating divergence. In contrast, A2 (degree of mandatory disclosure) records the highest cross-national Jaccard index (0.61), falling within the convergence range, and also exhibits the highest inter-coder reliability ($\kappa = 0.89$). This suggests that both countries are increasingly aligned in formalizing ESG disclosure requirements. A1 (measurement approach) follows with a value of 0.52, indicating partial convergence and reflecting similarities in measurement practices across the two systems.

Table 6. Jaccard Similarity Coefficient and Cohen's κ by attribute dimensions

Attribute Dimension	within-Korea Jaccard	within-China Jaccard	cross-national Jaccard	Cohen's κ	Covergence Assessment
A1: Measurement Approach	0.74	0.63	0.52	0.85	partial conv.
A2: Regulatory Stringency	0.81	0.71	0.61	0.89	convergence
A3: Data Source	0.68	0.59	0.47	0.82	partial conv.
A4: GRI Alignment	0.77	0.38	0.29	0.78	Divergence
A5: SME Applicability	0.89	0.31	0.18	0.81	sig. Divergence

Note. Convergence thresholds: Jaccard ≥ 0.60 = convergence; 0.40-0.60 = partial convergence; < 0.40 = divergence. Cohen's $\kappa \geq 0.70$ = adequate reliability; $\kappa \geq 0.80$ = good reliability (Landis & Koch, 1977).

3.3 Evaluation Process Results

Based on the findings from section 3.1 and 3.2, Table 7 presents the results of the five-dimensional process comparison framework adapted from Florian Berg et al. (2022). The results indicate that four out of the five dimensions exhibit divergence or significant divergence, while only the data collection mechanism demonstrates partial convergence. This distribution provides support for Hypothesis H3. The findings suggest that differences in ESG evaluation processes for SMEs

between the two countries extend beyond technical variations and reflect systematic institutional divergence. These differences are observed across multiple dimensions, including system design, review mechanisms, specialization arrangements, and implementation strategies. Furthermore, Korea's ESG system is characterized by strong government coordination and a high degree of standardization, whereas China's system reflects a multi-actor governance structure and ongoing institutional development, particularly in the context of SME-specific ESG frameworks.

Table 7. Comparative Analysis result of ESG rating process between China and Korea

Comparative Dimension	Korea	China	Assessment
Indicator Design Authority	Government-led (MOTIE) with civil-society participation	Multi-stakeholder: CSRC, MoF, stock exchanges, research institutions	Divergence
Data Collection Mechanism	Standardised disclosure (K-ESG unified framework); integrated supply-chain data collection	Voluntary self-reporting and publicly available data (transitional phase)	Partial Convergence
External Verification	Mature ESG rating ecosystem; third-party verification adopted by leading firms	External rating system nascent; limited SME participation	Divergence
SME-Specific Provisions	Explicit simplified indicator set (27 items); tiered implementation guidelines; dedicated SME guidance	CSRC guidelines principally target listed companies; no dedicated SME version currently available	Significant Divergence
International Standard Alignment	Active alignment with international norms (EU Taxonomy, ISSB, E S R S); supply-chain compliance emphasis	Domestically oriented; incremental adoption of international frameworks under development	Divergence

Note: Assessment criteria derived from Jaccard convergence thresholds (Berg et al. 2022)

4. Robustness Analysis

To assess the validity and reliability of the findings, a series of robustness checks were

conducted. First, All ESG indicators were independently coded by two researchers, and any discrepancies were resolved through a structured reconciliation process. Cohen's κ values consistently exceeded 0.70 across all three analytical dimensions, indicating substantial inter-coder reliability and confirming that the observed divergence reflects underlying structural differences rather than coding subjectivity.

Second, to examine whether the low similarity scores are sensitive to indicator definitions, the Jaccard similarity coefficients were recalculated and the overall similarity remained below 0.30. Furthermore, the relative ordering across ESG domains ($E > S > G$) was preserved. This result suggests that the identified structural divergence is robust to variations.

Third, the coding procedure was replicated using ISO 26000 as an alternative reference framework to validate the attribute classification. The results remain broadly consistent, reinforcing the robustness of the findings, particularly with respect to GRI alignment and SME applicability gaps.

V. Conclusions

This study provides a systematic comparative analysis of ESG rating for SMEs in China and Korea by integrating three analytical dimensions: indicator overlap, attribute consistency and evaluation processes. The findings reveal a clear pattern of cross-national divergence, with relatively higher convergence observed in the environmental domain and significant divergence in the social and governance domains. At the attribute level, the results highlight substantial inconsistencies, particularly in SME applicability and alignment with international standards. Furthermore, differences in evaluation processes suggest that ESG divergence is not merely technical but reflects deeper institutional and governance structures in the two countries. Furthermore, the findings of this

study provide several important policy implications.

First, policymakers should promote greater standardization and international alignment of ESG indicators, particularly in the social and governance domains where divergence is most pronounced. Aligning domestic ESG frameworks with internationally recognized standards, such as the Global Reporting Initiative (GRI), would enhance cross-national comparability and improve the credibility of ESG assessments. Second, it is essential to develop SME-specific ESG evaluation frameworks that account for the resource constraints and operational characteristics of smaller firms. Simplified reporting requirements, modular indicator systems, and digital self-assessment tools can help reduce compliance burdens and increase SME participation. Third, enhanced coordination between regulatory authorities and market-based rating agencies is needed to reduce fragmentation across ESG evaluation systems. In particular, establishing unified guidelines or standards may improve consistency and reduce discrepancies in ESG ratings. Moreover, cross-national policy negotiation and cooperation should be strengthened to facilitate mutual recognition of ESG standards and promote convergence in key sustainability areas.

Despite these contributions, this study still has several limitations. First, this research is limited to a comparative analysis of two countries: China and Korea, which may constrain the scope of the study. Second, the analysis is based on institutional ESG frameworks rather than firm-level data, which may limit the ability to capture actual ESG performance outcomes. Future research may extend this study by incorporating firm-level ESG data, expanding the country sample, or applying quantitative methods to further validate the findings. Such efforts would contribute to a more comprehensive understanding of ESG evaluation systems in a global context.

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