

SPILOVER EFFECTS OF BENCHMARK COMPANIES IMPROVED ENVIRONMENTAL, SOCIAL, AND GOVERNANCE (ESG) PERFORMANCE ON INDUSTRY CUSTOMER RELATIONSHIP STABILITY: EMPIRICAL EVIDENCE FROM CHINA

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Annotation. The uncertainty and dynamic complexity of the external environment have led to frequent and rapidly spreading supply chain disruptions. Improving Environmental, Social, and Governance (ESG) ratings to stabilize supply chain customer relationships has gradually become a focal issue in business practice and theoretical research. However, existing literature lacks systematic theoretical insights into how improved ESG performance by industry benchmark firms enhances customer relationship stability. Drawing on signaling and dynamic competition theories, and using ESG rating data from Chinese A-share listed companies from 2013 to 2024, a fixed-effects model at the industry level was constructed to examine whether the industry spillover effect of benchmark firms' improved ESG performance on customer relationship stability is positive or negative, and to analyze the underlying mechanism of this spillover effect. Results show that improved ESG performance by benchmark firms generates a positive industry spillover effect on customer relationship stability (0.1080). The mechanism involves benchmark firms driving industry-wide ESG rating improvements, thereby leading other firms to enhance product differentiation and strengthen corporate reputation to stabilize customer relationships. This positive spillover effect intensifies when firms perceive high external environmental uncertainty and possess strong dynamic capabilities. Furthermore, the positive spillover effect can lead to economic outcomes that reduce fluctuations in supply–demand volumes and relationships. The conclusions offer valuable insights for comprehensively advancing ESG implementation across industries, reinforcing the “chain leader” role of benchmark enterprises, stabilizing supply chain customer relationships, and balancing supply–demand dynamics.

Keywords: improved ESG performance, benchmark enterprises, customer relationship stability, industry spillover effects.

JEL classification: M14, M41, G34.

Introduction

The current global economy is experiencing a resurgence of “deglobalization,” intensified Sino–U.S. trade friction, and the restructuring of global industrial and supply chains. Compounded by the impact of the COVID-19 pandemic, these factors have led to rising uncertainties in global supply chains and significantly increased instability in business–customer relationships. According to McKinsey's 2024 report “Risk,

Resilience, and Rebalancing of the Global Value Chain,” geopolitical tensions and natural disasters have caused frequent disruptions in global product supply and demand fluctuations. On average, a global supply chain disruption lasting over a month occurs every 3.3 years, resulting in annual supply chain profit losses exceeding 47%. Evidently, the risk of global supply chain disruptions has become a critical issue constraining corporate sustainable development. In response, the Chinese government has set the development goal of “strengthening the resilience and security of industrial and supply chains” to build secure and stable supply chains and enhance the stability of supply chain enterprise cooperation. Environmental, Social, and Governance (ESG) represents the projection of sustainable development principles within the corporate sector, providing a systematic framework for evaluating enterprises’ environmental protection, social responsibility, and corporate governance in supply chain management. ESG performance overcomes the limitations of traditional financial data in communicating sustainability information, including green development initiatives, product safety compliance, corporate reputation metrics, and social responsibility commitments, to supply chain stakeholders (Seok *et al.*, 2024). Consequently, clients increasingly prioritize suppliers’ ESG performance when selecting partners. Benchmark enterprises occupy a “pioneering” position within their industries, exerting a leading influence. Their ESG practices generate a mimetic effect across upstream and downstream enterprises in the supply chain (He, Ren, 2024). As ESG evaluation standards gain traction, incorporating benchmark enterprises’ ESG performance into supply chain management has emerged as a crucial strategy for companies to enhance market competitiveness and stabilize customer relationships (Tang *et al.*, 2023). Particularly, amid heightened external uncertainties, strong ESG performance carries significant label spillover value, helping win customer trust and thereby stabilizing supply chain partnerships (Xu *et al.*, 2024). However, whether improvements in benchmark firms’ ESG performance generate spillover effects within the industry, potentially enhancing overall customer relationship stability, remains largely unexplored. Against this backdrop, this study examines the industry spillover effects, underlying mechanisms, heterogeneity, and economic consequences of benchmark enterprises’ improved ESG performance on customer relationship stability. It not only validates the critical role of benchmark enterprises as “chain leaders” but also provides empirical evidence and problem-solving insights for governments seeking to maintain supply chain stability.

Corporate ESG performance and customer relationship stability are prominent topics in the field of business administration. Existing literature focuses on two aspects: the economic consequences of improved corporate ESG performance and the factors influencing customer relationship stability. Based on signaling theory, strong ESG performance not only reduces nonsystemic risk faced by enterprises (Albuquerque *et al.*, 2019; Lu *et al.*, 2026) and financing costs (Eliwa *et al.*, 2021). It also creates value (Le Tran, Coqueret, 2023), serving as a new pathway for profit growth (Fatemi *et al.*, 2015) and thus supporting sustained corporate performance growth (Velte, 2017). As external stakeholders and key partners, suppliers also prioritize ESG performance. They extend great commercial credit to companies with strong ESG records (Lian *et al.*, 2023), thereby enhancing the firm’s bargaining power throughout the supply chain. Stable customer relationships signal mutually beneficial symbiosis across the supply chain. Through mutual support and oversight, they minimize information asymmetry and integrate upstream–downstream resources to co-create supply chain value (Jayasimha, 2022). Factors influencing customer relationship stability include geographic proximity (Joskow, 1985), dedicated relationship investments (Anderson *et al.*, 2003), relational commitment (Yang *et al.*, 2008), executive-level customer relationships (Intintoli *et al.*, 2017), and corporate disclosure quality (Wen *et al.*, 2022). Overall, while scholars have noted that corporate ESG performance can enhance individual customer relationships (Seok *et al.*, 2024), enterprises are not isolated entities. Especially as industry leaders, benchmark companies wield significant influence,

and their ESG performance profoundly impacts their entire sector. However, existing literature has yet to articulate the mechanism through which improved ESG performance by benchmark companies generates spillover effects on industry-wide customer relationship stability. Furthermore, existing research has not sufficiently explored the variability of spillover effects across different firm characteristics or their resulting economic consequences. To address these practical and theoretical gaps, this study adopts an industry-level perspective to tackle the following questions: Does improved ESG performance by benchmark firms contribute to enhancing customer relationship stability within the industry, hence generating spillover effects? What are the underlying mechanisms? What economic consequences does this impact entail?

This study's potential marginal contribution lies in two aspects: First, by focusing on industry spillover effects, this study deconstructs the intrinsic logic linking improved ESG performance of benchmark enterprises to enhanced customer relationship stability within competitive contexts, thereby broadening the research landscape on the economic outcomes of ESG performance enhancement. Second, this study clarifies the mechanism through which improved ESG performance by leading firms generates spillover effects on industry-wide customer relationship stability. It reveals the heterogeneous impact of these spillover effects on the basis of firms' perceptions of external uncertainty and their dynamic capabilities, thus further defining the economic consequences of such spillovers. Third, this study offers guidance and insights for mitigating supply chain disruption risks and stabilizing supply chain relationships while providing reference points for formulating policies to enhance supply chain resilience.

The subsequent components of this paper are structured as follows: The second part presents research hypotheses based on theoretical analysis. The third part introduces the research methodology, detailing sample selection, data sources, variable specifications, model design, and descriptive statistical analysis. The fourth part indicates the analysis of empirical results through six dimensions: benchmark regression, endogeneity issues, robustness tests, mechanism testing, heterogeneity analysis, and economic consequence analysis. The fifth part provides the discussion, encompassing the analysis of findings on the basis of empirical results. The sixth part concludes with findings and implications, summarizing research conclusions from empirical evidence and discussion. It offers management insights, emphasizes limitations, and indicates future research directions.

1. Theoretical Analysis and Hypothesis Development

Dynamic competition theory posits that to maximize corporate value, listed companies form interactive relationships with other competitors within their industry. They then adjust their behavioral decisions and strategic planning in response to changes in the external environment to achieve operational objectives. Especially for benchmark enterprises, as the industry's powerhouse leaders, their strong behavioral influence will profoundly impact the development of other companies within the same sector (Arvidsson, Dumay, 2022). Based on organizational imitation theory, firms purposefully mimic the behaviors or decisions of benchmark companies (Shen *et al.*, 2023). Signaling theory emphasizes that signals released through information disclosures by listed companies are readily captured by firms within the same industry, serving as a source of information for other companies to learn from and imitate, thereby demonstrating the spillover effects of information disclosure (Lieberman, Asaba, 2006). As high-quality enterprises within their industries, benchmark companies' improvements in information disclosure likely attract attention from peers (Cohen *et al.*, 2012). For instance, firms with superior CSR performance can drive companies with average or poor performance to enhance their social responsibility levels, thus improving the quality of CSR disclosure across the industry through demonstration effects (Wang *et al.*, 2018). That is, after benchmark firms improve their ESG performance, peer companies actively emulate them to enhance ESG disclosure quality. This action protects them from being misjudged by the market as

having weaker sustainability capabilities, thereby safeguarding their credibility in product markets. Accordingly, ESG disclosure significantly reduces customers' risks and costs in obtaining supplier information, effectively mitigating information asymmetry between upstream and downstream supply chain participants and ultimately strengthening customer relationship stability. In business practice, companies often integrate ESG principles into product differentiation strategies and corporate reputation enhancement tactics. First, inspired by leading firms' advanced products, other companies incorporate ESG concepts into raw material selection, product design, and packaging while innovating green manufacturing processes to achieve product differentiation (Meira *et al.*, 2023). This strategy helps them gain market recognition and boost customer satisfaction. It also reduces product substitutability and enhances customer trust (Bertrand *et al.*, 2021). Furthermore, it alleviates customer concerns about contract fulfillment (Chen *et al.*, 2021) and mitigates adverse selection risks faced by information-disadvantaged customers who cannot ascertain the true quality of suppliers' products. Second, benchmark enterprises' proactive fulfillment of social and governance responsibilities demonstrates their commitment to corporate reputation. Influenced by these leaders, peer firms' heightened reputation awareness drives them to align their conduct with maximizing corporate social value. This alignment signals proactive social and governance responsibility, highlights sound values, and ultimately earns stakeholder trust (Eliwa *et al.*, 2021). In sum, after benchmark companies improve their ESG performance, peer firms will emulate them to enhance their own ESG performance to maintain market recognition. By increasing product differentiation and strengthening corporate reputation, they signal their high quality to secure stable customer relationships. In this process, the benchmark companies' improved ESG performance generates positive spillover effects within the industry.

On this basis, we propose research hypothesis H1a.

H1a: Improvements in ESG performance by benchmark enterprises generate positive spillover effects (demonstration effects) within the same industry, thereby enhancing the stability of customer relationships within that industry.

The theory of scarce resources emphasizes that, driven by the goal of maximizing benefits, market resources flow toward the competitive party. Regions with strong economic strength will signal their advantages to surrounding areas, attracting the aggregation of production factors such as talent, technology, and capital to the core region (Van *et al.*, 2023). Similarly, a competitive effect exists among microlevel enterprises, manifested as leading companies competing for resources from other industry players. Research indicates that firms achieving an A-grade tax credit rating gain enhanced reputation and positive image, positioning them as industry leaders and enabling them to compete for credit resources from other enterprises (Ding *et al.*, 2023). Based on signaling theory, improvements in a benchmark firm's ESG rating signify advancements in environmental protection, social responsibility fulfillment, and corporate governance. This situation signals to customers that the firm is high quality. Customers, motivated by risk avoidance, will proactively shift their business toward the benchmark firm, consequently weakening the stability of other firms' customer relationships (Bauer *et al.*, 2018). Therefore, improvements in benchmark firms' ESG performance may generate negative spillover effects (competition effects) within the industry. Specifically, they compete for customer resources from other firms in the industry, leading to the breakdown of customer relationships among competitors and subsequently reducing the overall stability of customer relationships within the industry. On this basis, we propose research hypothesis H1b.

H1b: Improvements in benchmark companies' ESG performance generate negative spillover effects (competition effects) within the same industry, thereby reducing the stability of customer relationships among peer companies.

2. Methodology

2.1 Sample and Data Sources

The China Securities Regulatory Commission issued “*Content and Format Guidelines for Information Disclosure by Companies Issuing Securities to the Public No. 2—Content and Format of Annual Reports (2012 Revision)*” in 2012, which requires A-share listed companies to disclose the names and transaction amounts of their top five customers and suppliers starting from 2013. Accordingly, the measurement of customer relationship stability in this study relies on the customer name information disclosed by enterprises. Chinese A-share listed companies from 2013 to 2024 are selected as the research sample. ESG rating data are sourced from the widely used Huazheng Securities website. The foundational data for customer relationship stability are obtained from the CNRDS database and corporate annual reports, compiled manually and processed using Python. All other data are sourced from the CSMAR database. The sample undergoes the following processing: (1) exclusion of financial sector listed companies; (2) exclusion of ST and *ST enterprises; (3) exclusion of samples with substantial missing data; (4) trimming of the top and bottom 1% of values of continuous variables, resulting in 6,647 final observations.

2.2 Variable Definitions

2.2.1 Explained Variable

The dependent variable is defined as the stability of a company's customer relationships (*Stability*). Such stability is primarily reflected in whether customers maintain continuous cooperation with the company. Building upon the research by Ramzan *et al.* (2021), this study utilizes the Python openpyxl library to measure customer relationship stability. The specific steps are as follows: First, C is denoted as the top five customers of company i in a given year. When C equals 1, it represents the largest customer, and so on. Second, if company i and customer C maintained a supply relationship for at least two consecutive years between 2013 and 2023, C is idle customer for company i and recorded as N_i^C , with a value of 1; otherwise, the value is 0. Finally, the customer relationship stability for company i and its top five

customers is calculated as
$$Stability = \sum_{C=1}^5 N_i^C / 5$$
. The higher the *Stability* value, the greater the stability between company i and customer C .

2.2.2 Explanatory Variable

The explanatory variable is the benchmark company's ESG performance improvement (*lesg*). Following Fan *et al.* (2024), this study defines specific industries in accordance with *the Guidelines for Industry Classification of Listed Companies* issued by the China Securities Regulatory Commission in 2012. Listed companies with the top 10% of main business income in the industry are designated as industry benchmark companies. On the basis of the rounding principle, if a given industry has fewer than five listed companies, the company with the highest main business revenue in that industry is designated as the benchmark company. Additionally, with reference to Huazheng ESG rating data and Arvidsson and Dumay (2022)'s variable definition methodology, dummy variables are employed to reflect improvements in benchmark firms' ESG performance. If at least one benchmark firm within an industry receives an

upgraded ESG rating compared with that in the previous year, all firms in that industry are assigned an *Iesg* value of 1 for that year; otherwise, the value is 0.

2.2.3 Control Variables

Referencing Gu *et al.* (2022) and Ersahin *et al.* (2024), we control for the variables that may influence the stability of corporate customer relationships. Concerning financial characteristics, firm size (*Size*), firm age (*Age*), firm capital structure (*Lev*), firm profitability (*Roa*), firm growth capability (*Growth*), and firm price-to-book ratio (*MA*) are controlled for. Regarding corporate governance, we control for the shareholding ratio of the top 10 shareholders (*Top10*), board size (*Board*), ownership nature (*SOE*), and institutional investor attention (*Inhold*). For the external environment, we control for the level of marketization in the region where the firm operates (*Market*).

Table 1. Definition of Key Variables

Variable Type	Variable Name	Variable Symbol	Variable Definition
Explained Variable	Corporate Customer Relationship Stability	<i>Stability</i>	The listed company has maintained a supply relationship with its top five customers for at least two consecutive years.
Explanatory Variable	Benchmark Companies' Improved ESG Performance	<i>Iesg</i>	If at least one benchmark company within an industry has its ESG rating upgraded compared with that in the previous year, the industry's IESG value for the current year is 1; otherwise, it is 0.
Control Variables	Enterprise Size	<i>Size</i>	Natural logarithm of total assets at the beginning of the period
	Company Age	<i>Age</i>	Natural logarithm of the number of years since the company's establishment
	Capital Structure	<i>Lev</i>	Total Liabilities at the Beginning of Period / Total Assets at the Beginning of Period
	Profitability	<i>Roa</i>	Net Profit / Total Assets
	Growth Potential	<i>Growth</i>	(Current Year Operating Profit - Previous Year Operating Profit) / Previous Year Operating Profit
	Price-to-book ratio	<i>MA</i>	Market value versus book value
	Top 10 Shareholders' Shareholding Ratios	<i>Top10</i>	Top 10 Shareholders' Shareholding Ratio as a Percentage of Total Share Capital
	Board size	<i>Board</i>	Natural logarithm of the number of members on a corporate board
	Nature of Ownership	<i>SOE</i>	If the listed company is a state-owned enterprise, the value is 1; otherwise, it is 0.
	Institutional Investor Interest	<i>Inhold</i>	Institutional investor shareholding ratio
	Marketization Level	<i>Market</i>	With reference to the method of Song <i>et al.</i> (2024), the natural logarithm of the calculated market index is taken.
	Company Fixed Effects	<i>Firm</i>	Controlling for the Impact of Individual Differences in Enterprises
	Year Fixed Effects	<i>Year</i>	Controlling for the Impact of Annual Trends

Source: created by the authors.

Additionally, we control for year and firm-specific fixed effects. Variable definitions are provided in Table 1.

2.3 Model Specification

On the basis of the theoretical analysis, improvements in ESG performance by benchmark enterprises are expected to generate spillover effects on customer relationship stability within the same industry. Considering the lagged nature of such spillover effects (Li *et al.*, 2023), we adopt the methodology proposed by Sun *et al.* (2022) to test these effects. Specifically, we construct a fixed-effects regression model with the dependent variable lagged by one period to examine the spillover effects, i.e.,

$$Stability_{i,t+1} = \alpha + \beta lesg_{j,t} + \gamma CV_{i,t} + Firm + Year + \varepsilon_{i,t} \quad (1)$$

where $lesg_{j,t}$ denotes the improvement in ESG performance of benchmark firm j in year t , $Stability_{i,t+1}$ represents the customer relationship stability of firm i in year $t+1$, $Controls$ is a set of control variables, $Firm$ is the firm-specific fixed effect, $Year$ is the time fixed effect, and ε is the random error term. This study primarily examines the β coefficient of $lesg$. If β is significantly greater than 0, $H1a$ holds, indicating that improved ESG performance by benchmark firms generates a demonstration effect within the industry, leading peers to enhance customer relationship stability. Conversely, if β is significantly less than 0, $H1b$ holds, suggesting that improved ESG performance by benchmark firms creates a competitive effect within the industry, reducing peer firms' customer relationship stability.

2.4 Descriptive Statistics

Table 2 shows an $lesg$ mean of 0.984, indicating that 98.4% of benchmark enterprises have improved their ESG performance. The $Stability$ mean is 0.361 with a standard deviation of 0.306, implying that the overall stability of customer relationships among Chinese A-share companies is relatively low, with minimal data fluctuation and no pronounced polarization. Among the control variables, $Size$, Age , $Board$, and $Market$ exhibit larger standard deviations and significant data volatility. Other control variables show lower data volatility.

Table 2. Descriptive Statistics of Variables

Variable	Sample size	Mean	Standard deviation	Minimum	Median	Maximum
<i>Stability</i>	6,647	0.3611	0.3062	0.0000	0.4000	1.0000
<i>lesg</i>	6,647	0.9840	0.1254	0.0000	1.0000	1.0009
<i>Size</i>	6,647	21.8701	1.1401	19.3734	21.7922	24.9984
<i>Age</i>	6,647	2.9053	0.3322	1.9463	2.9442	3.5266
<i>Lev</i>	6,647	0.4156	0.2165	0.0465	0.4018	0.9373
<i>Roa</i>	6,647	0.0293	0.0622	-0.2743	0.0324	0.1702
<i>Growth</i>	6,647	-0.2776	3.5257	-22.1332	0.0383	12.4617
<i>MA</i>	6,647	0.6242	0.2532	0.0883	0.6372	1.1777
<i>Top10</i>	6,647	0.5707	0.1556	0.2285	0.5826	0.8952
<i>Board</i>	6,647	2.3335	0.2543	1.6092	2.3033	2.9442
<i>SOE</i>	6,647	0.3787	0.4858	0.0000	0.0000	1.0000
<i>Inhold</i>	6,647	0.3563	0.2252	0.0013	0.3583	0.8443
<i>Market</i>	6,647	9.2982	1.8485	3.5642	9.6382	12.6840

Source: created by the authors.

3. Results Analysis

3.1 Baseline Regression Results

Table 3 primarily reports the regression results for Model (1). Column (1) controls for firm- and year-level fixed effects. Column (2) incorporates firm financial characteristics as control variables. Column (3) includes firm governance characteristics and external environment control variables. The results indicate that the regression coefficients for *lesg* on *Stability* are positive and statistically significant across Columns (1)–(3). This finding suggests that improvements in benchmark firms' ESG performance generate positive spillover effects (demonstration effects) within their industry, thereby enhancing customer relationship stability across the sector. Hypothesis *H1a* holds, whereas *H1b* does not.

Table 3. Baseline Regression Results

Variable	(1)	(2)	(3)
	<i>Stability</i>	<i>Stability</i>	<i>Stability</i>
<i>lesg</i>	0.1041*** (2.91)	0.1054*** (2.88)	0.1083*** (2.97)
<i>Size</i>		0.0463*** (3.16)	0.0425*** (2.87)
<i>Age</i>		0.0982 (0.94)	-0.0336 (-0.31)
<i>Lev</i>		-0.1090** (-2.33)	-0.1503*** (-3.18)
<i>Roa</i>		-0.2502** (-2.50)	-0.2073** (-2.06)
<i>Growth</i>		0.0011 (1.14)	0.0013 (1.07)
<i>MA</i>		-0.1171*** (-3.47)	-0.0293 (-0.81)
<i>Top10</i>			-0.3918*** (-6.13)
<i>Board</i>			-0.0485** (-2.57)
<i>SOE</i>			0.0034 (0.09)
<i>Inhold</i>			0.1744*** (4.90)
<i>Market</i>			0.0032 (0.26)
Constant	0.2121*** (5.97)	-0.8934** (-2.21)	-0.2563 (-0.61)
Year fixed effect	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes
N	6,647	6,647	6,647
Adj. R ²	0.0232	0.0281	0.0414

Note: (1) The values in the parentheses are robust standard errors clustered at the enterprise level; (2) *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Source: created by the authors.

3.2 Endogeneity Issues

(1) Instrumental Variable Method

Drawing on the study of Arvidsson and Dumay (2022), we select listed companies in China's A-share market that are included in the Fortune "Most Admired Chinese Companies" list (*Wealth*) as a proxy variable for *lesg*. The selected companies can be regarded as benchmark enterprises for improved ESG performance. *Wealth* does not directly affect customer relationship stability, thus serving as an instrumental variable. A two-stage least squares regression test is conducted for *Wealth*. Table 4, Columns (1) and (2), report the regression results for *Wealth* as an instrumental variable in the first and second stages, respectively. The F-statistic value of $23.18 > 10$ excludes the possibility of weak instrumentality. The coefficient for *Wealth* on *lesg* is significantly positive, and the coefficient for *lesg* on *Stability* is also significantly positive, confirming the robustness of the benchmark regression results.

(2) Heckman's Two-Step Method

The disclosure of top five customer information in listed companies' annual reports is voluntary, which leads to endogeneity issues in Model (1) due to nonrandom sample selection. Following the methodology of Certo *et al.* (2016), we employ a two-step Heckman approach to address this endogeneity. First, we construct a Probit model predicting whether a listed company discloses its top five customers. The explanatory variables include *Size*, *Lev*, *Roa*, *Growth*, *Top10*, and *SOE*, while the dependent variable is whether the company discloses its top five customers (1 if disclosed, 0 otherwise). Second, the inverse Mills ratio (*IMR*) is calculated on the basis of the constructed Probit model.

Table 4. Endogeneity Issues

Variable	(1)	(2)	(3)
	Instrumental Variable Method		Heckman's Two-Step Method
	<i>lesg</i>	<i>Stability</i>	<i>Stability</i>
<i>Wealth</i>	0.0775*** (4.81)		
<i>lesg</i>		0.6073** (2.53)	0.1064*** (2.95)
Control variables	Yes	Yes	Yes
Constant	0.9560*** (111.73)	-0.3176 (-1.34)	-0.8725* (-1.93)
<i>IMR</i>			-0.8224*** (-3.52)
Year fixed effect	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes
N	6,647	6,647	6,647
Adj. R ²	0.3203	0.0235	0.0443

Note: (1) The values in the parentheses are robust standard errors clustered at the enterprise level; (2) *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Source: created by the authors.

Finally, *IMR* is incorporated into Model (1) for regression. The regression results are shown in Column (3) of Table 4, from which *IMR* is -0.822 and is statistically significant, indicating sample selection bias in Model (1). However, after sample selection bias is controlled for, the *lesg* coefficient is 0.106 and is significant at the 1% level, consistent with the benchmark regression results. This result excludes endogeneity issues caused by nonrandom sample selection.

3.3 Robustness Test

(1) Redefining the Benchmark Enterprise Model

Following Newell *et al.* (2023), we define benchmark firms as those ranking in the top 5% by asset size within each industry. We treat improvements in their ESG performance as the explanatory variable (*lesg1*) and conduct regression analysis using Model (1). Column (1) of Table 5 reports that the coefficient for *lesg1* is 0.019 and is statistically significant at the 10% level, consistent with the benchmark regression results.

(2) Replacing Explanatory Variables

As the world's largest financial information provider, Bloomberg's disclosure of corporate ESG scores carries significant authority. Therefore, we adopt the Bloomberg ESG rating improvement (*PBesg*) as the explanatory variable and rerun the regression using Model (1). Column (2) in Table 5 shows that the *PBesg* coefficient is 0.122 and is statistically significant at the 1% level, indicating that the benchmark regression results are robust.

(3) Replacing the Explained Variable

Table 5. Robustness Tests

Variable	Replacing explanatory variables		Replacing the explained variable
	(1)	(2)	(3)
	<i>Stability</i>	<i>Stability</i>	<i>Stability_sale</i>
<i>lesg1</i>	0.0194* (1.81)		
<i>PBesg</i>		0.1223*** (2.74)	
<i>lesg</i>			0.0882* (1.95)
Control variables	Yes	Yes	Yes
Constant	0.2477 (0.62)	-0.0914 (-0.22)	-0.2778 (-0.57)
Year fixed effect	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes
N	7,246	6,647	6,647
Adj. R ²	0.0352	0.0394	0.0321

Note: (1) The values in the parentheses are robust standard errors clustered at the enterprise level; (2) *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Source: created by the authors.

Drawing on the work of Ramzan *et al.* (2021), we substitute the proportion of revenue from the top five clients in main business income as an alternative variable for *Stability* (*Stability_sale*) and rerun the regression using Model (1). Column (2) in Table 5 shows an *lesg* coefficient of 0.088, which is statistically significant at the 10% level. Consistent with the benchmark regression results, this finding reaffirms the positive spillover effect of improved ESG performance among benchmark enterprises.

3.4 Mechanism of Action Testing

Dynamic competition theory posits that signals released by benchmark companies' improved ESG performance are readily captured by other firms within the same industry. To maintain market competitiveness, these companies will actively emulate the ESG practices of benchmark enterprises (Heubeck, 2024). On the one hand, product competitiveness constitutes a vital component of a company's

core competitiveness. By learning from benchmark companies how to efficiently implement ESG, other firms integrate ESG principles into their product differentiation strategies. This integration actively enhances their product differentiation, meeting diverse and personalized customer demands, thereby strengthening customer relationship stability (Meira *et al.*, 2023). On the other hand, information asymmetry is an inherent challenge affecting supply chain relationships. Proactively emulating leading firms' ESG practices enhances corporate reputation, thus mitigating information asymmetry. Improved reputation signals sustainability to external stakeholders, strengthening customer trust and stabilizing relationships (Arduini *et al.*, 2024). Therefore, the mechanism of spillover effects can be understood as follows: Improved ESG performance by benchmark enterprises elevates ESG standards across the industry, achieving stable customer relationships by enhancing product differentiation and strengthening corporate reputation. The specific verification process is as follows:

First, Model (2) is constructed to investigate whether improvements in benchmark companies' ESG performance can elevate the ESG performance of their industry peers in the subsequent period. On the basis of Huazheng ESG ratings, an increase in a company's ESG rating in the subsequent period is considered an improvement in ESG performance (*Ifirm*), assigned a value of 1; otherwise, it is assigned a value of 0. Second, given that companies often invest considerably in marketing and service expenses to highlight their unique advantages when selling differentiated products, the degree of product differentiation can be measured by the ratio of a company's sales expenses to total assets (*C_product*) (Alda *et al.*, 2022). If *C_product* increases compared with that in the previous year, it is assigned a value of 1; otherwise, it is assigned a value of 0. Corporate reputation is measured by the ratio of intangible assets to total assets (*C_repu*) (Wong, Zhang, 2022). If *C_repu* increases compared with that in the previous year, it is assigned a value of 1; otherwise, it is assigned a value of 0. Finally, the sample is divided into product differentiation enhancement and non-enhancement groups, as well as corporate reputation enhancement and non-enhancement groups. Based on Model (1), group-specific tests examine whether improved ESG performance of benchmark firms in the product differentiation and corporate reputation enhancement groups significantly positively influences customer relationship stability within the same industry in the subsequent period.

$$Ifirm_{i,t+1} = \alpha_1 + \beta_1 Iesg_{j,t} + \gamma_1 CV_{i,t} + Firm + Year + \varepsilon_{i,t} \quad (2)$$

Column (1) in Table 6 shows an *Iesg* coefficient of 0.174, which is statistically significant at the 5% level. This finding indicates that improvements in benchmark companies' ESG performance significantly promote ESG rating improvements among other firms in the subsequent period. Comparison of Columns (2) and (3) shows that only the group with enhanced product differentiation exhibits a significantly positive *Iesg* coefficient. Similarly, comparison of Columns (4) and (5) demonstrates that only the group with strengthened corporate reputation displays a significantly positive *Iesg* coefficient. This finding indicates that improvements in benchmark companies' ESG performance exert a pronounced stabilizing effect on customer relationships for samples characterized by high product differentiation and strong corporate reputation. Thus, the mechanism through which enhanced ESG performance of benchmark companies generates spillover effects on industry customer relationships is validated.

Table 6. Mechanism of Action Verification

Variable	(1)	(2)	(3)	(4)	(5)
	<i>Ifirm</i>	Product Differentiation Improved Group	Product Differentiation Unimproved Group	Corporate Reputation Improved Group	Corporate Reputation Unimproved Group
<i>lesg</i>	0.1741** (2.41)	0.1103** (2.31)	0.0461 (0.87)	0.1085** (2.56)	0.0642 (0.93)
Control variables	Yes	Yes	Yes	Yes	Yes
Constant	2.1600*** (3.49)	0.3225 (0.50)	-0.4184 (-0.75)	0.5008 (0.83)	-0.4315 (-0.65)
Year fixed effect	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes
N	6,647	2,334	4,313	3,907	2,740
Adj. R ²	0.0134	0.0253	0.0776	0.0313	0.0693

Note: (1) The values in the parentheses are robust standard errors clustered at the enterprise level; (2) *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Source: created by the authors.

3.5 Heterogeneity Analysis

Dynamic competition theory suggests that in intense market competition, a firm's perception of external environmental uncertainty (Nenavani, Jain, 2022) and its dynamic capabilities (Matarazzo *et al.*, 2021) influence the spillover effects of benchmark firms' improved ESG performance on customer relationship stability. Therefore, this study examines the differentiated manifestations of spillover effects from the dual perspectives of external uncertainty perception and dynamic capabilities.

(1) Heterogeneity in Perceiving External Environmental Uncertainty

Amid escalating global economic uncertainties and recurring supply chain disruptions, firms increasingly rely on publicly available market information to mimic benchmark enterprises' decision making. This strategy mitigates risks of misjudgment and order loss stemming from information gaps (Kwon *et al.*, 2021). Consequently, heightened perceptions of external uncertainty prompt firms to actively emulate benchmark behaviors, adopt ESG principles, and strengthen customer relationship stability. Drawing from the research of Omar *et al.* (2021), this study employs text analysis to construct the perceived external uncertainty perception (*PEPU*). First, on the basis of the "Management Discussion and Analysis" (MD&A) section of listed companies' annual reports, sentences containing "economic policy"- and "uncertainty"-related terms are identified as indicating corporate perception of external uncertainty. Second, the proportion of "economic policy/uncertainty" statements relative to total MD&A sentences is calculated to determine *PEPU*. Model (1) incorporates the interaction term $lesg \times PEPU$ to examine how differing levels of perceived external environmental uncertainty influence spillover effects. From Table 7, Column (1), the coefficient for $lesg \times PEPU$ is 0.505 and is significant at the 10% level. This finding indicates that as firms' perception of external environmental uncertainty increases, they become considerably proactive in emulating benchmark enterprises, striving to implement ESG principles to enhance customer relationship stability.

(2) Heterogeneity of Firm Dynamic Capabilities

Firm dynamic capabilities were first proposed by Teece *et al.* (1997), primarily referring to a firm's capacity to adapt to dynamic environments by restructuring and integrating resources. In a fiercely competitive

market environment, the stronger a company's dynamic capabilities, the more effectively it can swiftly identify the latest industry trends, emulate leading companies to enhance ESG performance, promptly adjust strategies, and rapidly adapt to evolving market conditions. This characteristic plays a crucial role in strengthening their customer relationships (Elf *et al.*, 2022). This study references Peterson *et al.* (2021) and Singh *et al.* (2022) to measure corporate dynamic capabilities across three dimensions: absorptive capacity, innovation capacity, and adaptive capacity. First, R&D expenditure intensity is used to represent absorptive capacity, in which high intensity indicates strong ability to absorb new technologies and knowledge. Second, we select three indicators: annual R&D intensity (R&D expenditure/operating revenue), proportion of technical personnel (number of technical personnel/total number of employees), and number of invention patents. After standardizing these three indicators, we sum them to obtain the firm's innovation capability. Third, adaptability is primarily reflected in a firm's ability to flexibly respond to market environment changes through resource allocation. Therefore, the coefficient of variation of a firm's resource expenditure intensity is used to measure the flexibility of resource allocation, thereby representing adaptability. The resource expenditure intensity is calculated as follows: resource expenditure intensity = (R&D expenditure + capital expenditure + advertising expenditure) / operating revenue.

Table 7. Heterogeneity Analysis

Variable	(1)	(2)
	Stability	Stability
<i>lesg</i>	0.0706 (1.63)	0.1164*** (3.26)
<i>PEPU</i>	-0.5723** (-2.05)	
<i>lesg</i> × <i>PEPU</i>	0.5056* (1.80)	
<i>Dyn</i>		-0.3153* (-1.78)
<i>lesg</i> × <i>Dyn</i>		0.3433* (1.95)
Control variables	Yes	Yes
Constant	-0.1875 (-0.44)	-0.2477 (-0.58)
Year fixed effect	Yes	Yes
Firm fixed effect	Yes	Yes
N	6,647	6,647
Adj. R ²	0.0423	0.0425

Note: (1) The values in the parentheses are robust standard errors clustered at the enterprise level; (2) *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Source: created by the authors.

Finally, the arithmetic mean of the measured innovation capability, absorption capability, and adaptability is taken to represent the firm's dynamic capability (*Dyn*). Model (1) incorporates the interaction term *lesg*×*Dyn* to examine how varying levels of dynamic capability influence spillover effects. Column (2) of Table 7 shows that the coefficient for *lesg*×*Dyn* is 0.343 and is statistically significant. This finding indicates that strong dynamic capability enhances a firm's ability to emulate benchmark enterprises, actively implement ESG principles, and hence improve customer relationship stability.

3.6 Economic Consequence Analysis

The mechanism verification results indicate that improvements in ESG performance by benchmark enterprises can elevate ESG standards across the industry. This effect occurs through the enhancement of product differentiation and strengthening of corporate reputation to solidify customer relationships. Having established stable customer relationships, can enterprises then reduce fluctuations in supply and demand to achieve equilibrium? Can they mitigate volatility in supply–demand dynamics to sustain enduring relationships? To address these questions, Models (3) and (4) explore the economic consequences of the demonstration effect from two dimensions: supply–demand quantity volatility (*SD1*) and supply–demand relationship volatility (*SD2*). *SD1* primarily measures the deviation of production fluctuations from demand fluctuations. From the work of Bray and Mendelson (2012), *SD1*=quarterly standard deviation of production quantity / quarterly standard deviation of sales quantity. Drawing on the study of Mio *et al.* (2022), we measure *SD2* by the standard deviation of the proportion of sales to the top five customers over two consecutive years. Large *SD2* indicates great fluctuations in the supply–demand relationship.

$$SD1_{i,t+1} = \alpha_2 + \beta_2 Iesg_{j,t} + \delta_2 Iesg \times Stability + \gamma_2 CV_{i,t} + Firm + Year + \varepsilon_{i,t} \quad (3)$$

$$SD2_{i,t+1} = \alpha_3 + \beta_3 Iesg_{j,t} + \delta_3 Iesg \times Stability + \gamma_3 CV_{i,t} + Firm + Year + \varepsilon_{i,t} \quad (4)$$

In Columns (1) and (2) of *Table 8*, the coefficients for *Iesg*×*Stability* are −0.313 and −6.410, respectively, both significant at the 10% level. These results indicate that the spillover effects from benchmark enterprises' improved ESG performance reduce fluctuations in supply and demand quantities as well as supply–demand relationships, thereby contributing to the stability of the entire supply chain.

Table 8. Analysis of Economic Consequences

Variable	(1)	(2)
	<i>SD1</i>	<i>SD2</i>
<i>Iesg</i>	0.1695* (1.76)	1.0783 (0.94)
<i>Stability</i>	0.4482** (2.52)	6.5515** (2.00)
<i>Iesg</i> × <i>Stability</i>	−0.3132* (−1.75)	−6.4106* (−1.96)
Control variables	Yes	Yes
Constant	−1.0343 (−0.96)	−41.1126*** (−3.28)
Year fixed effect	Yes	Yes
Firm fixed effect	Yes	Yes
N	6,647	6,647
Adj. R ²	0.0414	0.0235

Note: (1) The values in the parentheses are robust standard errors clustered at the enterprise level; (2) *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Source: created by the authors.

4. Discussions

Using a fixed-effects regression model, we empirically examined the spillover effects of benchmark firms' improved ESG performance on the stability of customer relationships within their industries. This analysis validated the operational mechanisms, heterogeneity, and economic consequences of these spillover effects. Thus, all research questions proposed in this study have been addressed. The specific findings are discussed below:

(1) Can improvements in ESG performance by leading companies enhance customer relationship stability across the entire industry? Existing research indicates that corporate ESG performance can strengthen a company's own customer relationship stability, thereby increasing corporate value (Seok *et al.*, 2024). This advancement is primarily manifested through mechanisms such as reducing information asymmetry, enhancing product advantages, and improving operational efficiency, which collectively solidify customer relationships (Zhao, Wang, 2024). Overall, the ability of individual companies to maintain customer relationships through improved ESG performance is well established. However, from an industry-wide perspective, can enhanced ESG performance by leading firms elevate customer relationship stability across the entire sector? In intense competitive markets, leading firms occupy a "pacesetter" position. Any innovative products or services introduced by these leaders typically trigger active imitation and follow-up across the entire industry (Heubeck, 2024). Enhanced ESG performance by leading firms also spurs active ESG adoption across the industry, transmitting high-quality, and transparent corporate signals throughout the supply chain. This phenomenon solidifies supply chain relationships, bolsters resilience against disruption events, and enhances supply chain risk resistance (Kumar *et al.*, 2024). Furthermore, in saturated competitive markets, innovative products and services from benchmark enterprises may capture customers from competitors. Firms failing to follow suit promptly risk being eliminated (Bauer *et al.*, 2018). When other enterprises actively emulate benchmark companies by adopting ESG principles, they signal sustainability to customers, fostering mutual trust and solidifying supply chain relationships through long-term agreements. The findings of this study indicate that improvements in the ESG performance of leading firms can elevate ESG standards across the industry. This elevation is achieved through enhanced product differentiation and strengthened corporate reputation, thus solidifying customer relationships. The enhanced ESG performance of leading firms generates positive spillover effects on the stability of customer relationships. This finding aligns with Wang *et al.* (2024)'s argument that improvements in the ESG performance of leading companies can enhance supply chain sustainability, expanding the practical applications of dynamic competition theory.

(2) Does the demonstration effect of benchmark enterprises' improved ESG performance vary with the differences in their perception of external environmental uncertainty and dynamic capabilities? After establishing stable customer relationships, can enterprises further balance supply and demand volumes and relationships? When facing external uncertainty, customers often proactively reduce cooperation frequency for their own interests, triggering supply chain disruption risks. Conversely, if a company can swiftly perceive shifts in the market environment, keenly observe the innovative behaviors of industry benchmark enterprises, and proactively implement follow-up measures to convey signals of stable development to customers, it facilitates the establishment of long-term cooperation agreements and the stabilization of customer relationships (Nayal *et al.*, 2023). Dynamic capabilities emphasize a company's ability to rapidly integrate and reconfigure resources in response to external changes. This capability manifests in the enterprise's capacity to promptly identify and learn from leading firms' innovations, adapt swiftly to new market conditions, allocate resources efficiently, and demonstrate flexibility to customers, thereby strengthening mutual trust (Zhu, Mishra, 2023). After establishing robust supply chain

relationships with customers, enterprises can reduce fluctuations in supply–demand dynamics. This reduction in fluctuations facilitates smooth information flow between suppliers and customers regarding supply and demand, promoting equilibrium and mitigating the bullwhip effect in supply chains (Osadchiy *et al.*, 2021). This study demonstrates that firms with high perceptions of external environmental uncertainty and strong dynamic capabilities likely actively emulate benchmark enterprises, striving to implement ESG principles to enhance customer relationship stability. This finding extends the research by Sodhi *et al.* (2012) that differing levels of supply chain risk perception and coping capabilities yield heterogeneous effects on the stability of firm–customer cooperative relationships. This study further indicates that the demonstration effect of improved ESG performance by benchmark firms reduces fluctuations in supply and demand volumes and supply–demand relationships, corroborating Qu and Raff (2022)’s view that enhancing supply chain resilience can mitigate the bullwhip effect.

Conclusions and Implications

Conclusions

Existing research has yet to conduct systematic investigation on the industry spillover effects of improved corporate ESG performance. This study empirically verifies, using a fixed-effects model, the industry spillover effects and underlying mechanisms of benchmark firms’ improved ESG performance on customer relationship stability, while the heterogeneity and economic consequences of these spillover effects are examined. The research findings are as follows:

(1) Enhanced ESG performance by benchmark enterprises generates a significant demonstration effect, effectively boosting the stability of customer relationships among other companies within the same industry. This positive spillover effect is particularly pronounced and significant among enterprises that are sensitive to external environmental changes and possess strong learning and adaptation capabilities, demonstrating that a company’s own responsiveness is a key factor in amplifying the benchmarking effect.

(2) The spillover effect does not take effect directly. Its core mechanism lies in incentivizing an overall improvement in ESG practices across the industry, solidifying customer relationships through two key pathways: First, by emulating leading companies, firms integrate ESG principles into daily operations, enhancing the differentiation of their products or services. This approach makes them uniquely attractive in the market to meet specific customer needs. Second, companies actively practicing ESG principles effectively resolve information asymmetry with customers, significantly boosting their reputational capital and enhancing customer trust and loyalty. The combined effect of these two factors ultimately leads to long-term stability in customer relationships.

(3) The strengthened relationship between enterprises and customers significantly reduces dual fluctuations in supply chain metrics—in terms of supply–demand volume (e.g., order quantities and procurement volumes) and supply–demand stability (e.g., partnership reliability). This reduction in fluctuations generally enhances the supply chain network’s robustness, resilience, and operational stability, thereby supporting the sustainability and risk resilience of the entire economic system.

Management Implications

On the basis of the research findings, the following management implications are proposed: (1) Benchmark enterprises should continuously advance ESG performance improvement initiatives, assume primary responsibility as “chain leaders” within industrial and supply chains, and actively promote ESG implementation practices to peers. (2) Peer companies must vigorously implement green and environment-friendly concepts, actively fulfill social responsibilities, and strive to enhance corporate

governance to improve ESG ratings. Leveraging ESG principles can differentiate products, strengthen corporate reputation, mitigate information asymmetry with partners, increase customer trust, enhance customer relationship stability, and maintain supply chain stability. (3) Enterprises must continuously study and analyze the latest ESG concepts to enhance their foresight, perception, and insight in responding to external environmental changes. They should proactively allocate resources to adapt to market shifts, strengthen their capacity to absorb advanced practices, explore new knowledge for breakthrough innovations, and improve dynamic decision-making capabilities in volatile environments. Only then can they gain competitive advantages within the supply chain, stabilize customer relationships, precisely match supply and demand, and enhance supply chain resilience. (4) Regulatory authorities should guide the industry toward benchmark enterprises through policy alignment, establish the role of supply chain “lead entities,” actively seek input from exemplary companies, and develop a standardized ESG rating system. Implementing an ESG negative list system, offering tax incentives and credit support to enterprises improving their ESG ratings, will encourage sustained ESG practices. This approach fosters transparent supply chain information, strengthens customer relationships, and bolsters the supply chain’s risk resilience.

Limitations and Future Direction

Although this study examines the industry spillover effects of benchmark companies’ improved ESG performance on customer relationship stability from theoretical and empirical perspectives, yielding several valuable research conclusions, certain limitations remain that warrant further investigation and discussion in future studies. For instance, regarding the measurement of customer relationship stability, this study is constrained by publicly disclosed information from listed companies, including only the top five customers. This limitation prevents the measurement of customer relationship stability based on the entire customer base, potentially undermining the generalizability of the findings. Future research could employ field surveys such as interviews and questionnaires to obtain primary data for precise measurement of corporate customer relationship stability. Additionally, while this study primarily examines the demonstration effect of benchmark companies’ improved ESG performance on customer relationship stability, future research could develop comprehensive models to explore the spillover effects of such improvements on supply chain resilience, thereby deepening our understanding of supply chain resilience.

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Acknowledgements. This study was supported by Achievements of the National Social Science Foundation of China (No 24CJL019).

ESG REZULTATUS PAGERINUSIŲ ETALONINIŲ ĮMONIŲ ŠALUTINIS POVEIKIS PRAMONĖS KLIENTŲ RYŠIŲ STABILUMUI: EMPIRINIAI ĮRODYMAI IŠ KINIJOS

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Santrauka. Išorinės aplinkos neapibrėžtumas, dinamika ir sudėtingumas lėmė dažnus tiekimo grandinės sutrikimus. Aplinkosaugos, socialinių ir valdymo (ESG) įvertinimų gerinimas siekiant stabilizuoti tiekimo grandinės klientų santykius palaipsniui tapo pagrindiniu verslo praktikos ir teorinių tyrimų objektu. Tačiau esamoje literatūroje trūksta sistemingų teorinių įžvalgų apie tai, kaip geresni pramonės etaloninių įmonių ESG rezultatai didina klientų santykių stabilumą. Remiantis signalizacijos ir dinaminės konkurencijos teorijomis bei pasitelkus Kinijos A akcijų biržoje kotiruojamų bendrovių ESG įvertinimo duomenis nuo 2013 iki 2024 m., pramonės lygmeniu buvo sukurtas fiksuotų efektų modelis. Siekiama iširti, ar pagerėjusių etaloninių įmonių ESG rezultatų šalutinis poveikis klientų santykių stabilumui yra teigiamas ar neigiamas. Taip pat analizuotas pagrindinis šio šalutinio poveikio mechanizmas. Rezultatai rodo, kad geresni etaloninių įmonių ESG rezultatai sukuria teigiamą šalutinį pramonės poveikį klientų santykių stabilumui (0,1080). Mechanizmas apima etalonines įmones, skatinančias visos pramonės ESG įvertinimų gerinimą. Siekiant stabilizuoti santykius su klientais, tokiu būdu kitos įmonės skatinamos didinti produktų diferenciaciją ir stiprinti įmonės reputaciją. Šis teigiamas šalutinis poveikis sustiprėja, kai įmonės suvokia didelį išorinį aplinkos neapibrėžtumą ir turi stiprių dinaminį pajėgumą. Be to, teigiamas šalutinis poveikis gali lemti ekonominius rezultatus, kurie sumažina pasiūlos ir paklausos apimčių bei santykių svyravimus. Išvados pateikiamos įžvalgos, kaip visapusiškai skatinti ESG įgyvendinimą įvairiuose pramonės sektoriuose, sustiprinti etaloninių įmonių „grandinės lyderio“ vaidmenį, stabilizuoti tiekimo pokyčius.

Reikšminiai žodžiai: pagerėję ESG rodikliai; etaloninės įmonės; klientų santykių stabilumas; šalutinis poveikis pramonei.