ONLINE APPENDICES

Appendix A: Summary of the literature on global supply chains and ESG-related issues

To highlight the contribution of our study to the literature, we conducted a targeted review of prior research using Web of Science. We searched for key terms including "ESG (environmental, social, and governance)," "corporate social (ir)responsibility," "corporate misconduct," "sustainability," and "global value (supply) chain." The search focused on the fields of international business (IB) and operations and supply chain management, which are recognized as core fields emphasizing the sustainability practices of multinational enterprises (MNEs) within global supply chains (Marano et al., 2024). The summarized findings are presented in Table A.1.

The majority of previous studies primarily explore the opportunity dimension of ESG, such as ESG disclosures (e.g., Gualandris et al., 2021) or CSR performance (e.g., Li and Cuervo-Cazurra, 2024). Only a handful of studies address ESG from a risk perspective, and these tend to be limited by their scope: conceptual frameworks (e.g., Asmussen et al., 2023), specific risks like conflicts over minerals (e.g., Kim and Davis, 2016), broader but non-supplier-specific CSR risks (e.g., Mol and Lee, 2024), or narrow focuses on environmental (E) or social (S) risks (e.g., Mateska et al., 2024; Wang et al., 2024). While CSR and sustainability issues in MNEs' global supply chains have long been a focal point in IB research, such studies predominantly examine these challenges at the level of the focal firm (e.g., Strike et al., 2006) or within dyadic relationships (e.g., Wang et al., 2024). It is only in recent years that researchers have begun to highlight the complexities of managing CSR and sustainability within geographically dispersed global supply chains, as summarized in Table A.1.

Crucially, no prior research has investigated supplier-induced ESG risks from the perspective of an MNE's small-world network structure and the geographical dispersion of its suppliers. While IB scholars have acknowledged the challenges of managing globally dispersed supply chains (e.g., Asmussen et al., 2023; Li and Cuervo-Cazurra, 2024; Narula, 2019), the literature lacks insights into the mechanisms by which locational heterogeneity among suppliers—leading to coordination complexities—affects ESG-related issues. Our study extends the literature by focusing on the global supply chain networks of MNEs, an approach advocated in recent IB research (e.g., Wang et al., 2024). Our findings contribute to IB theory by revealing how supplier-induced ESG controversies are

influenced by the geographical dispersion of suppliers and how MNEs' small-world networks help mitigate these impacts.

Table A.1 Prior studies on ESG in the context of global supply chains

Study	Focus	Data/sample	Key findings
Asmussen et al. (2023)	MNE's monitoring, bargaining power, and suppliers' irresponsible actions	N/A (game theory approach)	MNE's reliance on monitoring alone can weaken their bargaining position and promote irresponsible actions by the suppliers.
Bellamy et al. (2020)	Firms' administrative environmental innovation (AEI), supply network structure, and environmental disclosure	3,106 firm-year observations over 2013-2014	Implementation of AEIs is positively associated with environmental disclosure, enhanced by flow accessibility, flow control, and interconnectedness in supply networks.
Castaldi et al. (2023)	Buyer's global supply chain governance strategies and suppliers' social sustainability implementation	356 garment and footwear suppliers surveyed in 2015-2016	Audit-based and cooperation-based governance are effective for suppliers' social sustainability implementation when there is contextual fit with local institutional (legal and civil society) pressures in the supplier country.
Gualandris et al. (2021)	Supply chain structure and ESG disclosure	187 extended supply chains organized by 4,803 firms for 2015 (ESG in 2017)	Supply chain density and clustering are positively associated with ESG disclosure, while geographical heterogeneity in supply chains is negatively associated ESG disclosure.
Kim and Davis (2016)	Firm-level factors that determine whether their products are free of conflict of minerals	1,179 companies that submitted Specialized Disclosure reports in 2015	Globally diversified firms and those with high complex supply chains are less likely to declare their products conflict-free.
Li and Cuervo-Cazurra (2024)	Misbehavior in a MNE's subsidiaries and suppliers, and its CSR performance	8,764 firm-year observations from 2008 to 2018	Both subsidiary and supplier misbehavior are positively associated with MNE's CSR performance, while home-country CSR mandates enhance the direct relationships.
Liu et al. (2021)	Supply network structure and CSR orientation incongruence in buyer-supplier relationships	215 firm dyads (unknown survey year)	Supply network structure (centrality and density) moderates the negative relationship between CSR orientation incongruence supply chain relationship performance.
Mateska et al. (2024)	Factors affecting media-reported environmental supply chain sustainability risks	1,537 firm-year observations over 2008-2013	Buying firms operating in countries with high sustainability risk experience less media-reported environmentally unethical behavior of suppliers.
Mol and Lee (2024)	Institutional distance, interorganizational relationships, and corporate social irresponsibility (CSiR)	N/A (conceptual approach)	The greater the distance between institutions, the higher the likelihood and severity of corporate social irresponsibility, which is negatively moderated by

			cooperative buyer-supplier relationships.
Narula (2019)	MNEs' cascading compliance approach in enforcing labor standards in Bangladesh	N/A (interview, but undisclosed, approach)	Due to cost-prohibitive challenges, MNEs have transformed their global supply chains into a cascading responsibility model, shifting the responsibility (and the cost) of monitoring to first-tier suppliers, who are then responsible for the compliance of their own suppliers.
Saunders et al. (2019)	Buying firm's structural embeddedness that facilitates sustainable initiatives	N/A (illustrative case, SABMiller, approach)	Buying firm's structural embeddedness, as network exchange brokers, facilitates the development, diffusion and adoption of sustainability initiatives across a global network of suppliers.
Wang et al. (2024)	MNE's smart disclosure (as a visibility enhancing mechanism) and its focal supplier's human rights violations	8,527 observations at the MNC-supplier-year level in the apparel industry during 2014-2020	MNE's smart disclosure is likely to decrease a focal supplier's human rights violations, which is facilitated by supplier centrality and supplier-country civil society development.

Appendix B: Variables

Table B.1 Summary of the variables

Variables	Operationalization/measure	Data source
ESG controversies	Extent of unique ESG-related incidents in which a company was held accountable for the actions of its suppliers	RepRisk
Supply base ESG performance	Average of supplier ESG scores	Refinitiv ESG, FactSet
Supply base ESG performance disparity	Standard deviation of supplier ESG scores	Refinitiv ESG, FactSet
Supply base country sustainability	Average of supplier country Sustainable Development Goals scores	United Nations Sustainable Development Goals Index, FactSet
Supply base industry diversity	Simpson's diversity index	Refinitiv Eikon, FactSet
Supplier-targeted environmental policies	Number of supplier-targeted environmental policies	Refinitiv ESG
Supplier-targeted social policies	Number of supplier-targeted social policies	Refinitiv ESG
Firm size	ln(total assets +1)	Refinitiv Eikon
Return on assets	$\frac{\text{Net profit (loss)}}{\text{Total assets}} \times 100$	Refinitiv Eikon
Debt to equity	$\frac{\text{Total liabilities}}{\text{Total shareholder's equity}} \times 100$	Refinitiv Eikon
Market to book	$\frac{\text{Market capitalization}}{\text{Book value of equity}}$	Refinitiv Eikon
Foreign sales percentage	$\frac{\text{Foreign sales}}{\text{Total sales}} \times 100$	Refinitiv Eikon
Foreign assets percentage	$\frac{\text{Foreign assets}}{\text{Total assets}} \times 100$	Refinitiv Eikon
Firm age	Year of observation – Year of incorporation	Refinitiv Eikon, company websites
Indegree centrality	$ln(number\ of\ suppliers + 1)$	FactSet
Outdegree centrality	$ln(number\ of\ customers + 1)$	FactSet
Incloseness centrality	Closeness centrality in the MNE's upstream supply chain network	FactSet
Outcloseness centrality	Closeness centrality in the MNE's downstream supply chain network	FactSet
Betweenness centrality	Betweenness centrality in the MNE's supply chain network	FactSet
Geographical dispersion of suppliers	Sum of direct distances between the MNE's and suppliers' countries	Refinitiv Eikon, FactSet
Small-worldness	$\frac{\text{Local clustering coefficient} \times 100}{\text{Average path length}}$	FactSet

Interpretation of the small-worldness variable

The small-worldness variable uses local clustering in the numerator and average shortest path length in the denominator. Since local clustering is a proportional measure, dividing it by average path length often results in a small value, making its regression coefficient less intuitive to interpret. To address this issue, we multiplied the local clustering measure by 100 to express it as a percentage. For example, the mean small-worldness value in our sample is 0.61. Given that the mean average shortest path length in the sample is 4.05 (indicating that the focal firm can connect with others in the FactSet SCR database in roughly four steps), we can interpret that the average focal firm in our sample has approximately 2.47% (0.61 * 4.05) of closed triads among its supply chain partners.

Control variable description

To account for the collective influence of the ESG performance of suppliers, we used the average and standard deviation of supplier ESG scores per MNE as a control variable (Li & Cuervo-Cazurra, 2024). Moreover, since suppliers' ESG performance can be driven by sustainability standards and regulations of the countries where they are located, we controlled for the weighted average of the United Nations Sustainable Development Goals Index (Sachs et al., 2022) of the suppliers' countries of origin. We also included a supply base industry diversity measure as a control variable to account for varying sustainability norms, standards, and regulations across different supplier industries. We applied Simpson's diversity index (Simpson, 1949) to supplier industries to measure supply base industry diversity.

For MNE management control variables, we included the number of supplier-targeted environmental and social policies implemented by each MNE. Supplier-targeted environmental policies encompass initiatives such as reducing environmental impact at the supply base, environmentally conscious supplier selection, supplier termination for environmental reasons, and efforts to reduce resource consumption across the supply chain. Supplier-targeted social policies include monitoring and training mechanisms to prevent child labor, forced labor, human rights violations, and corruption among supply chain partners (Refinitiv, 2021). Table B.2 below provides a detailed description of these variables.

Additionally, we controlled for firm size using the natural logarithm of total assets and for profitability with return on assets. To account for financial leverage and market valuation, which could influence the extent of ESG controversies, we included the debt-to-equity ratio and market-to-book ratio as control variables, respectively. To capture the scope of international business activities, we used the percentage of international sales to total sales and the percentage of international assets to total assets (Biru et al., 2022). Firm age was also included as a control.

To account for the network structure of each MNE, we incorporated the natural logarithm of indegree and outdegree centralities to measure the number of suppliers and customers, respectively. Finally, we controlled for additional network centrality measures (i.e., incloseness, outcloseness, and betweenness centralities) as these have been linked to information access and sustainability activities in supply chain and international business literature (e.g., Bellamy et al., 2020; Liu et al., 2021; Sharma et al., 2019).

Table B.2 Supplier-targeted environmental and social policies variable description

Type	Title	Description
Supplier-targeted environmental policies	Policy Environmental Supply Chain	Does the company have a policy to include its supply chain in the company's efforts to lessen its overall environmental impact? - legal compliance data on the supply chain to reduce environmental impact is in scope - data on collaboration with suppliers towards reducing their environmental impacts - data on the reduction of environmental impacts at the suppliers' operations
	Environmental Supply Chain Management	Does the company use environmental criteria (ISO 14000, energy consumption, etc.) in the selection process of its suppliers or sourcing partners? - data can also be on existing suppliers who were selected using some environmental criteria
	Env Supply Chain Partnership Termination	Does the company report or show to be ready to end a partnership with a sourcing partner, if environmental criteria are not met?
	Environmental Supply Chain Monitoring	Does the company conduct surveys of the environmental performance of its suppliers? - any evidence that the company monitors its suppliers on environmental issues through surveys, audits, supplier site visits, and questionnaire
Supplier-targeted social policies	Supply Chain Health & Safety Training	Does the company train its executives or key employees on employee health & safety in the supply chain? - consider if the company provides training on health & safety to its suppliers and/or procurement staff - include if the company requires that suppliers have to train their employees on health and safety
	Policy Supply Chain Health & Safety	Does the company have a policy to improve employee health & safety in its supply chain? - consider if the company describes that it strives to select and/or work with suppliers who apply minimum security standards for their employees - consider the information if the company visits suppliers sites, monitoring, inspection, guiding and working with suppliers to improve the health and safety performance in the supply chain - information is considered from the supplier's code of conduct where the company details the requirement with regards to the protection of health and safety of suppliers' workforce - information is considered from industry code such as the electronic industry citizenship coalition (EICC) code of conduct and pharmaceutical industry principles (PSCI). However, the company has to describe its own actions/programs and initiatives related to the specific principles stipulated in the codes - legal compliance data is considered

	Supply Chain Health & Safety Improvements	Does the company show through the use of surveys or measurements that it is improving the level of employee health & safety in its supply chain? - consider if the company claims to monitor or assess its suppliers through survey, audit, and questionnaire on health and safety performance while showing progress - consider if both absolute and normalized figures are provided shows progress - information is not qualified if the company claims or shows to study or assess the company's performance during the year under review but does not provide historical data and therefore cannot show to have improved - information is considered from industry code such as the electronic industry citizenship coalition (EICC) code of conduct and pharmaceutical industry principles (PSCI). However, the company has to describe its own actions/programs and initiatives related to the specific principles stipulated in the codes
	Supplier ESG training	Does the company provide training in environmental, social or governance factors for its suppliers? - consider training, programs or any other collaboration with suppliers to improve their ESG (environmental, social and governance) performance - audits leading to collaboration with suppliers on ESG issues are considered - consider information from industry code such as the Electronic Industry Citizenship Coalition (EICC) code of conduct and Pharmaceutical Industry Principles (PSCI). However, the Company has to describe its own actions/programs and Initiatives related to the specific principles stipulated in the codes

Source: Refinitiv (2021)

Table B.3 Pairwise correlations and descriptive statistics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) ESG controversies	1										
(2) Supply base ESG performance	-0.035	1									
(3) Supply base ESG performance disparity	0.077	0.161	1								
(4) Supply base country sustainability	-0.014	0.305	0.054	1							
(5) Supply base industry diversity	0.484	0.021	0.197	0.000	1						
(6) Supplier-targeted environmental policies	0.214	-0.058	0.103	-0.062	0.291	1					
(7) Supplier-targeted social policies	0.220	0.002	0.096	0.007	0.299	0.619	1				
(8) Firm size	-0.007	0.470	0.365	0.193	0.122	-0.058	0.019	1			
(9) Return on assets	-0.005	0.074	0.027	0.003	0.039	0.010	0.059	0.080	1		
(10) Debt to equity	0.003	-0.036	-0.005	-0.049	-0.002	0.046	0.015	-0.035	-0.006	1	
(11) Market to book	0.016	0.003	0.031	-0.028	0.026	0.051	0.045	0.031	-0.025	0.456	1
(12) Foreign sales percentage	0.134	0.150	0.120	0.119	0.122	0.237	0.285	0.026	0.031	0.025	0.013
(13) Foreign assets percentage	0.151	0.057	0.032	0.069	0.099	0.169	0.127	-0.032	-0.033	0.063	0.019
(14) Firm age	0.075	-0.070	0.067	-0.047	0.219	0.201	0.219	0.039	0.000	0.010	0.032
(15) Indegree centrality	0.480	0.075	0.293	0.040	0.733	0.382	0.401	0.210	0.010	-0.007	0.037
(16) Outdegree centrality	0.286	0.098	0.156	0.027	0.336	0.321	0.328	0.078	-0.020	0.010	0.032
(17) Incloseness centrality	0.351	0.240	0.259	0.105	0.591	0.219	0.269	0.383	0.007	0.007	0.068
(18) Outcloseness centrality	0.168	0.065	0.141	0.035	0.268	0.291	0.291	0.084	-0.051	0.006	0.037
(19) Betweenness centrality	0.418	0.081	0.106	0.009	0.404	0.180	0.178	0.066	0.025	-0.008	0.008
(20) Geographical dispersion of suppliers	0.536	0.038	0.126	0.070	0.631	0.218	0.286	0.073	0.008	-0.010	0.011
(21) Small-worldness	-0.201	0.197	0.001	0.192	-0.174	-0.198	-0.150	0.231	-0.006	-0.027	0.007
Mean	16.44	48.34	18.52	75.38	6.91	2.39	2.25	15.00	4.99	1.18	3.29
Standard deviation	35.39	10.44	5.71	1.26	6.96	1.40	1.29	1.36	3.23	6.65	8.86
Minimum	0	11.07	0	63.72	1	0	0	0	-33.27	-38.30	-203.17
Maximum	372.33	86.65	41.71	85.19	61.01	4	4	18.56	25.58	257.05	186.93

	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(12) Foreign sales percentage	1									
(13) Foreign assets percentage	0.517	1								
(14) Firm age	0.105	0.074	1							
(15) Indegree centrality	0.231	0.070	0.210	1						
(16) Outdegree centrality	0.443	0.119	0.150	0.456	1					
(17) Incloseness centrality	0.090	0.028	0.162	0.753	0.309	1				
(18) Outcloseness centrality	0.334	0.071	0.126	0.365	0.776	0.290	1			
(19) Betweenness centrality	0.194	0.074	0.095	0.457	0.446	0.349	0.275	1		
(20) Geographical dispersion of suppliers	0.181	0.134	0.133	0.579	0.330	0.432	0.249	0.431	1	
(21) Small-worldness	-0.093	-0.087	-0.076	-0.201	-0.079	0.005	0.075	-0.124	-0.132	1
Mean	28.18	10.05	41.46	3.23	2.38	0.08	0.09	0.001	5.12	0.61
Standard deviation	27.34	17.03	33.20	1.03	1.30	0.01	0.04	0.001	12.42	0.64
Minimum	0	0	0	1.10	0	0	0	0	0	0
Maximum	100	100	188	6.40	6.41	0.11	0.16	0.02	123.75	4.98

Number of observations = 3033. Absolute values of correlation coefficients greater than or equal to 0.036 are significant at 5%.

Appendix C: Robustness checks

Table C.1 Fixed effects OLS estimates

	Model 1		Model 2		Model 3		Model 4	
Supply base ESG performance	-0.068	*0.146*	-0.048	*0.289*	-0.049	*0.280*	-0.054	*0.215*
	(0.047)		(0.045)		(0.045)		(0.043)	
Supply base ESG performance disparity	-0.101	*0.132*	-0.088	*0.179*	-0.086	*0.187*	-0.090	*0.170*
	(0.067)		(0.065)		(0.065)		(0.065)	
Supply base country sustainability	-0.097	*0.700*	-0.181	*0.461*	-0.176	*0.474*	-0.181	*0.462*
	(0.251)		(0.246)		(0.245)		(0.246)	
Supply base industry diversity	1.609	*0.000*	1.136	*0.000*	1.141	*0.000*	1.079	*0.000*
	(0.380)		(0.299)		(0.299)		(0.289)	
Supplier-targeted environmental policies	-0.973	*0.104*	-0.701	*0.197*	-0.706	*0.193*	-0.654	*0.219*
	(0.597)		(0.542)		(0.542)		(0.531)	
Supplier-targeted social policies	0.712	*0.293*	0.759	*0.251*	0.742	*0.264*	0.724	*0.268*
	(0.676)		(0.661)		(0.663)		(0.653)	
Firm size	-0.096	*0.944*	0.272	*0.832*	0.254	*0.843*	0.663	*0.593*
	(1.355)		(1.278)		(1.277)		(1.240)	
Return on assets	0.164	*0.043*	0.164	*0.035*	0.168	*0.032*	0.171	*0.026*
	(0.081)		(0.078)		(0.078)		(0.076)	
Debt to equity	-0.031	*0.338*	-0.030	*0.342*	-0.030	*0.334*	-0.031	*0.301*
	(0.032)		(0.031)		(0.031)		(0.030)	
Market to book	0.016	*0.450*	0.019	*0.413*	0.018	*0.431*	0.024	*0.313*
	(0.022)		(0.023)		(0.023)		(0.023)	
Foreign sales percentage	-0.031	*0.534*	-0.012	*0.798*	-0.012	*0.802*	-0.006	*0.892*
	(0.049)		(0.047)		(0.047)		(0.047)	
Foreign assets percentage	0.022	*0.638*	0.017	*0.708*	0.016	*0.717*	0.010	*0.824*
	(0.047)		(0.044)		(0.044)		(0.043)	
Firm age	0.092	*0.000*	0.066	*0.000*	0.065	*0.001*	0.066	*0.000*
	(0.022)		(0.018)		(0.018)		(0.018)	
Indegree centrality	-2.411	*0.120*	-2.508	*0.095*	-2.611	*0.081*	-2.400	*0.103*
	(1.548)		(1.497)		(1.493)		(1.470)	
Outdegree centrality	4.435	*0.003*	4.018	*0.003*	3.920	*0.003*	3.771	*0.003*
	(1.458)		(1.321)		(1.325)		(1.277)	
Incloseness centrality	-18.055	*0.718*	8.066	*0.864*	13.174	*0.781*	16.617	*0.720*
	(49.901)		(46.895)		(47.410)		(46.373)	
Outcloseness centrality	-94.669	*0.001*	-89.560	*0.001*	-87.245	*0.001*	-84.180	*0.001*
	(27.935)		(25.942)		(26.030)		(25.169)	
Betweenness centrality	3426.60	*0.353*	3358.68	*0.303*	3362.23	*0.303*	3251.41	*0.295*
	(3688.96)		(3258.89)		(3260.89)		(3099.17)	
Geographical dispersion of suppliers			0.382	*0.000*	0.382	*0.000*	0.564	*0.000*
			(0.094)		(0.094)		(0.129)	
Small-worldness					-0.680	*0.193*	-0.255	*0.640*
					(0.521)		(0.544)	
Geographical dispersion × Small-worldness							-0.636	*0.001*
							(0.182)	
Constant	14.081	*0.650*	14.085	*0.640*	14.266	*0.635*	8.419	*0.778*
	(31.030)		(30.117)		(30.010)		(29.783)	
Firm fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Within-R^2	0.229		0.258		0.258		0.266	
Number of observations	3033		3033		3033		3033	

Clustered robust standard errors in parentheses; p values in italics.

Table C.2 Tobit model estimates (NAICS 4-digit dummy)

	Model 5		Model 6		Model 7		Model 8	
Supply base ESG performance	-0.130	*0.075*	-0.114	*0.111*	-0.114	*0.110*	-0.121	*0.089*
	(0.073)		(0.072)		(0.072)		(0.071)	
Supply base ESG performance disparity	-0.194	*0.073*	-0.179	*0.092*	-0.175	*0.098*	-0.185	*0.080*
	(0.108)		(0.106)		(0.106)		(0.105)	
Supply base country sustainability	-0.227	*0.550*	-0.349	*0.348*	-0.335	*0.369*	-0.310	*0.402*
	(0.380)		(0.373)		(0.373)		(0.371)	
Supply base industry diversity	1.426	*0.000*	0.923	*0.000*	0.927	*0.000*	0.846	*0.000*
	(0.131)		(0.138)		(0.138)		(0.138)	
Supplier-targeted environmental policies	0.018	*0.973*	0.295	*0.567*	0.280	*0.588*	0.332	*0.518*
	(0.526)		(0.516)		(0.516)		(0.512)	
Supplier-targeted social policies	0.718	*0.163*	0.767	*0.129*	0.746	*0.140*	0.745	*0.137*
	(0.514)		(0.505)		(0.505)		(0.502)	
Firm size	-0.066	*0.948*	0.116	*0.906*	0.159	*0.872*	0.470	*0.631*
	(1.019)		(0.989)		(0.989)		(0.978)	
Return on assets	0.172	*0.235*	0.176	*0.216*	0.180	*0.205*	0.181	*0.201*
	(0.145)		(0.142)		(0.142)		(0.141)	
Debt to equity	-0.017	*0.752*	-0.017	*0.747*	-0.018	*0.739*	-0.019	*0.716*
	(0.054)		(0.053)		(0.053)		(0.052)	
Market to book	-0.005	*0.904*	-0.001	*0.984*	-0.001	*0.972*	0.008	*0.849*
	(0.042)		(0.041)		(0.041)		(0.041)	
Foreign sales percentage	0.028	*0.506*	0.041	*0.319*	0.041	*0.324*	0.050	*0.217*
	(0.042)		(0.041)		(0.041)		(0.041)	
Foreign assets percentage	0.079	*0.051*	0.069	*0.080*	0.069	*0.083*	0.061	*0.120*
	(0.040)		(0.040)		(0.040)		(0.039)	
Firm age	-0.041	*0.321*	-0.045	*0.256*	-0.045	*0.254*	-0.049	*0.204*
	(0.041)		(0.039)		(0.039)		(0.039)	
Indegree centrality	2.718	*0.041*	2.303	*0.077*	2.139	*0.104*	2.609	*0.046*
	(1.332)		(1.303)		(1.314)		(1.309)	
Outdegree centrality	4.676	*0.000*	4.348	*0.000*	4.220	*0.000*	4.062	*0.000*
	(0.847)		(0.830)		(0.842)		(0.837)	
Incloseness centrality	10.052	*0.884*	46.956	*0.490*	54.932	*0.423*	56.660	*0.407*
	(68.757)		(67.992)		(68.627)		(68.280)	
Outcloseness centrality	-89.544	*0.000*	-81.843	*0.000*	-78.828	*0.000*	-75.453	*0.000*
	(21.453)		(21.067)		(21.325)		(21.199)	
Betweenness centrality	3938.12	*0.000*	3767.58	*0.000*	3771.52	*0.000*	3597.53	*0.000*
	(445.16)		(436.85)		(436.80)		(434.88)	
Geographical dispersion of suppliers			0.414	*0.000*	0.414	*0.000*	0.631	*0.000*
			(0.043)		(0.043)		(0.056)	
Small-worldness					-0.863	*0.358*	-0.177	*0.850*
					(0.940)		(0.941)	
Geographical dispersion × Small-worldness							-0.766	*0.000*
							(0.132)	
Constant	7.810	*0.808*	12.880	*0.681*	11.428	*0.716*	4.461	*0.886*
	(32.114)		(31.375)		(31.408)		(31.184)	
Firm random effects	Yes		Yes		Yes		Yes	
Industry fixed effects (NAICS 4-digit)	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Log likelihood	-10837.16		-10790.64		-10790.22		-10773.34	
Number of observations	3033		3033		3033		3033	

Standard errors in parentheses; p values in italics.

Table C.3 Industry split sample analysis

	Agriculture/raw materials/manufacturing (NAICS 11-33)				Service (NAICS 42-92)			
	Model 9		Model 10		Model 11		Model 12	
Supply base ESG performance	-0.091	*0.261*	-0.108	*0.181*	-0.142	*0.243*	-0.127	*0.294*
	(0.081)		(0.080)		(0.122)		(0.121)	
Supply base ESG performance disparity	-0.063	*0.612*	-0.074	*0.547*	-0.146	*0.394*	-0.144	*0.398*
	(0.124)		(0.123)		(0.171)		(0.170)	
Supply base country sustainability	-0.076	*0.851*	-0.050	*0.902*	-1.110	*0.100*	-1.151	*0.086*
	(0.405)		(0.402)		(0.674)		(0.670)	
Supply base industry diversity	0.883	*0.000*	0.832	*0.000*	0.999	*0.000*	0.920	*0.000*
	(0.163)		(0.162)		(0.218)		(0.218)	
Supplier-targeted environmental policies	-0.404	*0.515*	-0.398	*0.517*	0.076	*0.925*	0.213	*0.792*
	(0.620)		(0.615)		(0.812)		(0.807)	
Supplier-targeted social policies	1.941	*0.001*	1.818	*0.002*	-0.069	*0.933*	0.045	*0.956*
	(0.597)		(0.593)		(0.820)		(0.815)	
Firm size	0.370	*0.782*	0.654	*0.617*	-0.652	*0.576*	-0.404	*0.726*
	(1.334)		(1.310)		(1.166)		(1.152)	
Return on assets	0.082	*0.653*	0.102	*0.575*	0.059	*0.784*	0.036	*0.868*
	(0.183)		(0.181)		(0.214)		(0.213)	
Debt to equity	0.009	*0.962*	0.015	*0.940*	-0.033	*0.601*	-0.033	*0.595*
	(0.196)		(0.195)		(0.063)		(0.063)	
Market to book	0.022	*0.844*	0.022	*0.848*	-0.032	*0.577*	-0.018	*0.751*
	(0.115)		(0.114)		(0.058)		(0.058)	
Foreign sales percentage	-0.020	*0.613*	-0.012	*0.746*	0.150	*0.068*	0.157	*0.054*
	(0.039)		(0.038)		(0.082)		(0.082)	
Foreign assets percentage	0.059	*0.131*	0.051	*0.184*	0.024	*0.780*	0.027	*0.750*
	(0.039)		(0.039)		(0.085)		(0.084)	
Firm age	0.013	*0.726*	0.012	*0.739*	-0.115	*0.121*	-0.117	*0.111*
	(0.037)		(0.036)		(0.074)		(0.073)	
Indegree centrality	4.349	*0.005*	4.704	*0.002*	3.063	*0.130*	3.704	*0.066*
	(1.557)		(1.545)		(2.022)		(2.017)	
Outdegree centrality	3.159	*0.003*	3.088	*0.003*	3.445	*0.007*	3.166	*0.012*
	(1.065)		(1.055)		(1.269)		(1.262)	
Incloseness centrality	34.476	*0.678*	40.813	*0.622*	-77.823	*0.470*	-79.189	*0.460*
	(83.160)		(82.686)		(107.672)		(107.214)	
Outcloseness centrality	-109.407	*0.002*	-103.589	*0.004*	-88.563	*0.002*	-84.116	*0.003*
	(35.865)		(35.601)		(28.224)		(28.073)	
Betweenness centrality	4899.05	*0.000*	4565.79	*0.000*	3693.69	*0.000*	3567.09	*0.000*
	(790.43)		(788.11)		(568.20)		(565.52)	
Geographical dispersion of suppliers	0.381	*0.000*	0.574	*0.000*	0.510	*0.000*	0.751	*0.000*
	(0.045)		(0.061)		(0.081)		(0.103)	
Small-worldness	0.276	*0.818*	0.843	*0.482*	-2.163	*0.124*	-1.384	*0.326*
	(1.203)		(1.199)		(1.405)		(1.409)	
Geographical dispersion × Small-worldness			-0.661	*0.000*			-0.902	*0.000*
			(0.144)				(0.237)	
Constant	-5.477	*0.876*	-12.308	*0.722*	68.847	*0.188*	67.827	*0.192*
	(34.974)		(34.601)		(52.343)		(51.969)	
Firm random effects	Yes		Yes		Yes		Yes	
Industry fixed effects (NAICS 2-digit)	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Log likelihood	-5342.99		-5332.42		-5423.88		-5431.05	
Number of observations	1477		1477		1556		1556	

Standard errors in parentheses; p values in italics.

Table C.4 Tier-2 supplier geographical dispersion analysis

	Model 13		Model 14		Model 15		Model 16	
Supply base ESG performance	-0.112	*0.120*	-0.098	*0.172*	-0.112	*0.119*	-0.098	*0.173*
	(0.072)		(0.072)		(0.072)		(0.072)	
Supply base ESG performance disparity	-0.142	*0.186*	-0.151	*0.159*	-0.142	*0.186*	-0.151	*0.157*
	(0.107)		(0.107)		(0.107)		(0.107)	
Supply base country sustainability	-0.356	*0.344*	-0.473	*0.210*	-0.360	*0.339*	-0.481	*0.201*
	(0.377)		(0.377)		(0.377)		(0.377)	
Supply base industry diversity	1.213	*0.000*	1.107	*0.000*	1.192	*0.000*	1.082	*0.000*
	(0.138)		(0.140)		(0.138)		(0.141)	
Supplier-targeted environmental policies	-0.212	*0.684*	-0.175	*0.736*	-0.205	*0.694*	-0.165	*0.750*
	(0.521)		(0.519)		(0.520)		(0.519)	
Supplier-targeted social policies	0.600	*0.238*	0.507	*0.319*	0.601	*0.237*	0.505	*0.320*
	(0.509)		(0.508)		(0.508)		(0.508)	
Firm size	-0.555	*0.525*	-0.294	*0.736*	-0.568	*0.514*	-0.291	*0.739*
	(0.872)		(0.873)		(0.872)		(0.872)	
Return on assets	0.199	*0.165*	0.194	*0.176*	0.200	*0.164*	0.194	*0.175*
	(0.143)		(0.143)		(0.143)		(0.143)	
Debt to equity	-0.020	*0.704*	-0.019	*0.716*	-0.020	*0.702*	-0.019	*0.715*
	(0.053)		(0.053)		(0.053)		(0.053)	
Market to book	-0.006	*0.882*	-0.003	*0.943*	-0.006	*0.881*	-0.003	*0.948*
	(0.042)		(0.042)		(0.042)		(0.042)	
Foreign sales percentage	0.024	*0.550*	0.033	*0.419*	0.024	*0.548*	0.033	*0.410*
	(0.040)		(0.040)		(0.040)		(0.040)	
Foreign assets percentage	0.068	*0.089*	0.068	*0.087*	0.068	*0.090*	0.068	*0.089*
	(0.040)		(0.040)		(0.040)		(0.040)	
Firm age	-0.029	*0.476*	-0.032	*0.434*	-0.029	*0.481*	-0.032	*0.436*
	(0.041)		(0.041)		(0.041)		(0.041)	
Indegree centrality	3.098	*0.018*	3.459	*0.008*	3.097	*0.018*	3.472	*0.008*
	(1.305)		(1.306)		(1.304)		(1.304)	
Outdegree centrality	4.414	*0.000*	4.181	*0.000*	4.407	*0.000*	4.161	*0.000*
	(0.843)		(0.843)		(0.843)		(0.843)	
Incloseness centrality	8.416	*0.902*	15.641	*0.820*	8.699	*0.899*	16.488	*0.810*
	(68.523)		(68.561)		(68.472)		(68.509)	
Outcloseness centrality	-95.074	*0.000*	-91.936	*0.000*	-94.988	*0.000*	-91.640	*0.000*
	(21.475)		(21.431)		(21.463)		(21.414)	
Betweenness centrality	3806.63	*0.000*	3678.43	*0.000*	3791.90	*0.000*	3658.68	*0.000*
	(449.43)		(449.48)		(449.16)		(449.09)	
Small-worldness	-0.992	*0.298*	-0.179	*0.854*	-0.995	*0.296*	-0.146	*0.881*
	(0.952)		(0.973)		(0.951)		(0.972)	
Geographical dispersion of suppliers (tier-2)	0.007	*0.000*	0.012	*0.000*				
	(0.002)		(0.002)					
Geographical dispersion (tier-2) × Small-worldness			-0.010	*0.000*				
			(0.003)					
Geographical dispersion of suppliers (tier-1&2)					0.007	*0.000*	0.012	*0.000*
					(0.002)		(0.002)	
Geographical dispersion (tier-1&2) × Small-worldness							-0.011	*0.000*
							(0.003)	
Constant	28.686	*0.355*	31.818	*0.304*	29.269	*0.345*	32.368	*0.295*
	(31.032)		(30.959)		(31.015)		(30.932)	
Firm random effects	Yes		Yes		Yes		Yes	
Industry fixed effects (NAICS 2-digit)	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Log likelihood	-10910.85		-10903.65		-10909.60		-10901.76	
Number of observations	3033		3033		3033		3033	

Standard errors in parentheses; p values in italics.

Table C.5 2SLS first stage estimates

Dependent variable:	Geographical dispersion of suppliers	
Supply base ESG performance	-0.023	*0.367*
	(0.025)	
Supply base ESG performance disparity	-0.025	*0.497*
	(0.037)	
Supply base country sustainability	0.289	*0.016*
	(0.120)	
Supply base industry diversity	0.324	*0.000*
	(0.048)	
Supplier-targeted environmental policies	-0.414	*0.015*
	(0.170)	
Supplier-targeted social policies	0.040	*0.811*
	(0.165)	
Firm size	-1.355	*0.017*
	(0.565)	
Return on assets	-0.042	*0.368*
	(0.047)	
Debt to equity	0.013	*0.452*
	(0.018)	
Market to book	-0.003	*0.855*
	(0.014)	
Foreign sales percentage	-0.007	*0.645*
	(0.015)	
Foreign assets percentage	-0.009	*0.533*
	(0.014)	
Firm age	0.015	*0.681*
	(0.037)	
Indegree centrality	0.093	*0.839*
	(0.455)	
Outdegree centrality	0.635	*0.026*
	(0.285)	
Incloseness centrality	-19.196	*0.346*
	(20.375)	
Outcloseness centrality	-18.850	*0.006*
	(6.794)	
Betweenness centrality	573.417	*0.000*
	(153.462)	
Small-worldness	0.761	*0.014*
	(0.308)	
Industry average geographical dispersion of suppliers	0.953	*0.000*
	(0.020)	
Capital expenditure	-0.231	*0.055*
	(0.120)	
Constant	2.966	*0.816*
	(12.725)	
Firm fixed effects	Yes	
Year fixed effects	Yes	
Within-R^2	0.632	
Number of observations	3033	

Standard errors in parentheses; p values in italics.

Table C.6 Instrument validity

Test	Main effect model	Interaction effect model
Cragg-Donald Wald F	1123.813	354.287
Kleibergen-Paap rk Wald F	224.79	18.699
Sargan-Hansen	$\chi^2_{(df=1)} = 2.787$, $p = 0.095$	$\chi^2_{(df=1)} = 2.851$, $p = 0.091$
Durbin-Wu-Hausman	$\chi^2_{(df=2)} = 0.812$, $p = 0.368$	$\chi^2_{(df=2)} = 1.028$, $p = 0.598$

Table C.7 2SLS second stage estimates

	Model 17		Model 18	
Supply base ESG performance	-0.045	*0.230*	-0.050	*0.176*
	(0.037)		(0.037)	
Supply base ESG performance disparity	-0.084	*0.133*	-0.087	*0.117*
	(0.056)		(0.056)	
Supply base country sustainability	-0.192	*0.384*	-0.199	*0.365*
	(0.220)		(0.220)	
Supply base industry diversity	1.051	*0.000*	0.978	*0.000*
	(0.249)		(0.249)	
Supplier-targeted environmental policies	-0.655	*0.198*	-0.595	*0.239*
	(0.508)		(0.506)	
Supplier-targeted social policies	0.751	*0.131*	0.733	*0.141*
	(0.498)		(0.498)	
Firm size	0.324	*0.724*	0.757	*0.414*
	(0.919)		(0.927)	
Return on assets	0.168	*0.020*	0.171	*0.016*
	(0.072)		(0.071)	
Debt to equity	-0.030	*0.341*	-0.031	*0.308*
	(0.031)		(0.030)	
Market to book	0.018	*0.416*	0.024	*0.294*
	(0.023)		(0.023)	
Foreign sales percentage	-0.008	*0.805*	-0.002	*0.945*
	(0.033)		(0.033)	
Foreign assets percentage	0.015	*0.688*	0.008	*0.822*
	(0.038)		(0.037)	
Firm age	0.060	*0.058*	0.061	*0.060*
	(0.032)		(0.032)	
Indegree centrality	-2.628	*0.020*	-2.410	*0.032*
	(1.126)		(1.125)	
Outdegree centrality	3.842	*0.000*	3.679	*0.000*
	(0.903)		(0.880)	
Incloseness centrality	18.077	*0.611*	22.116	*0.524*
	(35.536)		(34.719)	
Outcloseness centrality	-86.305	*0.000*	-83.025	*0.000*
	(16.218)		(15.850)	
Betweenness centrality	3349.25	*0.063*	3232.59	*0.059*
	(1801.83)		(1711.39)	
Geographical dispersion of suppliers	0.455	*0.000*	0.651	*0.000*
	(0.099)		(0.135)	
Small-worldness	-0.670	*0.081*	-0.226	*0.568*
	(0.384)		(0.396)	
Geographical dispersion × Small-worldness			-0.663	*0.000*
			(0.187)	
Firm fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
Within-R^2	0.257		0.265	
Number of observations	3033		3033	

Clustered robust standard errors in parentheses; p values in italics.

Table C.8 Analysis excluding largest firms

	Excluding firm size top 10%				Excluding firm size top 25%			
	Model 19		Model 20		Model 21		Model 22	
Supply base ESG performance	-0.098	*0.201*	-0.110	*0.146*	-0.130	*0.127*	-0.147	*0.081*
	(0.076)		(0.076)		(0.085)		(0.084)	
Supply base ESG performance disparity	-0.107	*0.348*	-0.117	*0.303*	-0.142	*0.251*	-0.153	*0.212*
	(0.114)		(0.113)		(0.124)		(0.123)	
Supply base country sustainability	-0.306	*0.446*	-0.277	*0.488*	-0.036	*0.940*	0.023	*0.961*
	(0.402)		(0.399)		(0.470)		(0.467)	
Supply base industry diversity	0.946	*0.000*	0.874	*0.000*	1.062	*0.000*	1.000	*0.000*
	(0.142)		(0.142)		(0.170)		(0.169)	
Supplier-targeted environmental policies	-0.287	*0.606*	-0.194	*0.726*	-0.750	*0.226*	-0.631	*0.306*
	(0.556)		(0.552)		(0.620)		(0.616)	
Supplier-targeted social policies	0.865	*0.111*	0.829	*0.124*	0.933	*0.129*	0.846	*0.166*
	(0.543)		(0.540)		(0.615)		(0.611)	
Firm size	0.570	*0.570*	0.839	*0.397*	1.029	*0.367*	1.225	*0.277*
	(1.005)		(0.990)		(1.141)		(1.126)	
Return on assets	0.184	*0.219*	0.199	*0.181*	0.245	*0.165*	0.259	*0.139*
	(0.150)		(0.149)		(0.176)		(0.175)	
Debt to equity	-0.011	*0.848*	-0.013	*0.817*	-0.016	*0.786*	-0.017	*0.772*
	(0.055)		(0.055)		(0.058)		(0.058)	
Market to book	0.004	*0.928*	0.014	*0.747*	-0.004	*0.929*	0.002	*0.975*
	(0.045)		(0.044)		(0.049)		(0.049)	
Foreign sales percentage	0.034	*0.426*	0.037	*0.389*	0.063	*0.190*	0.064	*0.178*
	(0.043)		(0.042)		(0.048)		(0.048)	
Foreign assets percentage	0.068	*0.110*	0.064	*0.132*	0.061	*0.186*	0.054	*0.240*
	(0.043)		(0.042)		(0.046)		(0.046)	
Firm age	-0.041	*0.333*	-0.040	*0.340*	-0.060	*0.195*	-0.060	*0.190*
	(0.043)		(0.042)		(0.047)		(0.046)	
Indegree centrality	2.502	*0.074*	2.945	*0.035*	3.478	*0.035*	3.771	*0.021*
	(1.402)		(1.395)		(1.645)		(1.634)	
Outdegree centrality	4.086	*0.000*	3.966	*0.000*	5.034	*0.000*	4.858	*0.000*
	(0.901)		(0.894)		(1.017)		(1.009)	
Incloseness centrality	68.450	*0.347*	76.904	*0.288*	81.499	*0.307*	96.406	*0.225*
	(72.724)		(72.423)		(79.806)		(79.484)	
Outcloseness centrality	-94.615	*0.000*	-91.877	*0.000*	-107.410	*0.000*	-103.648	*0.000*
	(23.115)		(22.966)		(25.672)		(25.501)	
Betweenness centrality	3836.62	*0.000*	3626.40	*0.000*	3852.01	*0.000*	3655.02	*0.000*
	(457.11)		(455.17)		(489.31)		(486.89)	
Geographical dispersion of suppliers	0.415	*0.000*	0.670	*0.000*	0.376	*0.000*	0.640	*0.000*
	(0.045)		(0.061)		(0.051)		(0.069)	
Small-worldness	-0.974	*0.373*	-0.060	*0.957*	-0.512	*0.687*	0.290	*0.819*
	(1.093)		(1.094)		(1.268)		(1.266)	
Geographical dispersion × Small-worldness			-0.979	*0.000*			-1.108	*0.000*
			(0.161)				(0.195)	
Constant	5.422	*0.870*	-1.802	*0.956*	-24.478	*0.529*	-32.175	*0.404*
	(33.248)		(32.968)		(38.912)		(38.583)	
Firm random effects	Yes		Yes		Yes		Yes	
Industry fixed effects (NAICS 2-digit)	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Log likelihood	-10084.55		-10065.94		-8598.48		-8582.21	
Number of observations	2729		2729		2274		2274	

Standard errors in parentheses; p values in italics.

Table C.9 Betweenness centrality analysis

	Excluding betweenness centrality top 1%				Excluding the betweenness centrality variable			
	Model 23		Model 24		Model 25		Model 26	
Supply base ESG performance	-0.088	*0.193*	-0.093	*0.169*	-0.076	*0.285*	-0.085	*0.233*
	(0.068)		(0.067)		(0.072)		(0.071)	
Supply base ESG performance disparity	-0.113	*0.265*	-0.117	*0.243*	-0.125	*0.241*	-0.134	*0.205*
	(0.101)		(0.101)		(0.107)		(0.106)	
Supply base country sustainability	-0.355	*0.315*	-0.354	*0.314*	-0.448	*0.233*	-0.438	*0.241*
	(0.353)		(0.352)		(0.376)		(0.374)	
Supply base industry diversity	0.725	*0.000*	0.675	*0.000*	1.058	*0.000*	0.971	*0.000*
	(0.132)		(0.132)		(0.136)		(0.136)	
Supplier-targeted environmental policies	-0.038	*0.939*	0.018	*0.971*	0.233	*0.653*	0.283	*0.582*
	(0.492)		(0.491)		(0.519)		(0.515)	
Supplier-targeted social policies	0.653	*0.173*	0.616	*0.197*	0.731	*0.151*	0.706	*0.161*
	(0.479)		(0.478)		(0.508)		(0.504)	
Firm size	-0.118	*0.888*	0.067	*0.936*	-0.428	*0.617*	-0.123	*0.884*
	(0.841)		(0.834)		(0.856)		(0.844)	
Return on assets	0.200	*0.136*	0.202	*0.131*	0.200	*0.163*	0.203	*0.154*
	(0.134)		(0.134)		(0.143)		(0.142)	
Debt to equity	-0.012	*0.810*	-0.013	*0.794*	-0.015	*0.776*	-0.017	*0.753*
	(0.050)		(0.050)		(0.053)		(0.053)	
Market to book	-0.001	*0.979*	0.004	*0.909*	0.003	*0.941*	0.012	*0.773*
	(0.039)		(0.039)		(0.042)		(0.041)	
Foreign sales percentage	0.027	*0.486*	0.033	*0.393*	0.040	*0.321*	0.047	*0.231*
	(0.038)		(0.038)		(0.040)		(0.040)	
Foreign assets percentage	0.086	*0.022*	0.081	*0.032*	0.071	*0.075*	0.063	*0.109*
	(0.038)		(0.038)		(0.040)		(0.040)	
Firm age	-0.019	*0.626*	-0.021	*0.589*	-0.039	*0.332*	-0.040	*0.306*
	(0.040)		(0.039)		(0.040)		(0.039)	
Indegree centrality	3.549	*0.004*	3.814	*0.002*	3.120	*0.016*	3.615	*0.005*
	(1.243)		(1.241)		(1.297)		(1.289)	
Outdegree centrality	3.117	*0.000*	3.046	*0.000*	5.381	*0.000*	5.120	*0.000*
	(0.809)		(0.806)		(0.826)		(0.820)	
Incloseness centrality	60.698	*0.354*	62.036	*0.342*	95.708	*0.169*	95.482	*0.168*
	(65.427)		(65.313)		(69.642)		(69.193)	
Outcloseness centrality	-61.563	*0.002*	-60.541	*0.003*	-86.757	*0.000*	-82.829	*0.000*
	(20.225)		(20.171)		(21.484)		(21.329)	
Betweenness centrality	2280.52	*0.007*	2261.283	*0.007*				
	(838.04)		(835.424)					
Geographical dispersion of suppliers	0.306	*0.000*	0.468	*0.000*	0.423	*0.000*	0.662	*0.000*
	(0.043)		(0.058)		(0.043)		(0.057)	
Small-worldness	-1.157	*0.195*	-0.712	*0.427*	-0.931	*0.327*	-0.189	*0.842*
	(0.894)		(0.897)		(0.949)		(0.948)	
Geographical dispersion × Small-worldness			-0.529	*0.000*			-0.847	*0.000*
			(0.128)				(0.133)	
Constant	16.960	*0.562*	13.714	*0.638*	23.425	*0.447*	17.575	*0.565*
	(29.271)		(29.149)		(30.817)		(30.537)	
Firm random effects	Yes		Yes		Yes		Yes	
Industry fixed effects (NAICS 2-digit)	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Log likelihood	-10639.13		-10630.67		-10911.03		-10890.77	
Number of observations	3003		3003		3033		3033	

Standard errors in parentheses; p values in italics.

Table C.10 Industry-adjusted ESG controversies

	Dependent variable: Industry-adjusted ESG controversies							
	Model 27		Model 28		Model 29		Model 30	
Supply base ESG performance	-0.081	*0.303*	-0.078	*0.311*	-0.078	*0.307*	-0.080	*0.297*
	(0.078)		(0.077)		(0.077)		(0.076)	
Supply base ESG performance disparity	-0.163	*0.166*	-0.167	*0.149*	-0.167	*0.149*	-0.169	*0.141*
	(0.118)		(0.116)		(0.116)		(0.115)	
Supply base country sustainability	0.259	*0.544*	0.158	*0.707*	0.154	*0.715*	0.165	*0.694*
	(0.428)		(0.421)		(0.421)		(0.419)	
Supply base industry diversity	0.529	*0.000*	0.215	*0.129*	0.214	*0.130*	0.178	*0.210*
	(0.134)		(0.142)		(0.142)		(0.142)	
Supplier-targeted environmental policies	0.730	*0.209*	0.876	*0.126*	0.882	*0.124*	0.896	*0.116*
	(0.582)		(0.573)		(0.573)		(0.571)	
Supplier-targeted social policies	0.938	*0.109*	0.975	*0.090*	0.984	*0.088*	0.989	*0.085*
	(0.584)		(0.576)		(0.576)		(0.574)	
Firm size	-0.432	*0.585*	-0.335	*0.664*	-0.360	*0.643*	-0.248	*0.748*
	(0.791)		(0.773)		(0.776)		(0.772)	
Return on assets	0.196	*0.252*	0.199	*0.236*	0.198	*0.238*	0.199	*0.235*
	(0.171)		(0.168)		(0.168)		(0.168)	
Debt to equity	-0.119	*0.190*	-0.115	*0.194*	-0.115	*0.195*	-0.118	*0.191*
	(0.091)		(0.089)		(0.088)		(0.090)	
Market to book	-0.002	*0.974*	-0.002	*0.967*	-0.002	*0.970*	0.005	*0.918*
	(0.051)		(0.050)		(0.050)		(0.050)	
Foreign sales percentage	0.088	*0.037*	0.090	*0.028*	0.091	*0.027*	0.095	*0.020*
	(0.042)		(0.041)		(0.041)		(0.041)	
Foreign assets percentage	0.068	*0.102*	0.060	*0.142*	0.060	*0.141*	0.056	*0.175*
	(0.042)		(0.041)		(0.041)		(0.041)	
Firm age	-0.004	*0.916*	-0.003	*0.940*	-0.002	*0.950*	-0.003	*0.932*
	(0.034)		(0.034)		(0.034)		(0.033)	
Indegree centrality	3.827	*0.006*	3.296	*0.016*	3.361	*0.015*	3.632	*0.009*
	(1.397)		(1.370)		(1.384)		(1.382)	
Outdegree centrality	3.155	*0.000*	2.887	*0.001*	2.945	*0.001*	2.848	*0.002*
	(0.904)		(0.889)		(0.906)		(0.902)	
Incloseness centrality	-13.147	*0.869*	17.922	*0.820*	14.769	*0.853*	18.062	*0.820*
	(79.504)		(78.972)		(79.455)		(79.294)	
Outcloseness centrality	-78.729	*0.001*	-71.807	*0.003*	-73.377	*0.003*	-71.077	*0.004*
	(24.666)		(24.305)		(24.755)		(24.652)	
Betweenness centrality	3278.41	*0.000*	3168.89	*0.000*	3166.79	*0.000*	3073.21	*0.000*
	(423.81)		(417.29)		(417.36)		(417.04)	
Geographical dispersion of suppliers			0.256	*0.000*	0.255	*0.000*	0.368	*0.000*
			(0.043)		(0.043)		(0.058)	
Small-worldness					0.361	*0.739*	0.936	*0.393*
					(1.084)		(1.096)	
Geographical dispersion × Small-worldness							-0.445	*0.004*
							(0.154)	
Constant	-51.183	*0.128*	-44.195	*0.180*	-43.607	*0.187*	-46.883	*0.154*
	(33.601)		(32.980)		(33.030)		(32.898)	
Firm random effects	Yes		Yes		Yes		Yes	
Industry fixed effects (NAICS 2-digit)	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Log likelihood	-5632.83		-5615.54		-5615.48		-5611.22	
Number of observations	3033		3033		3033		3033	

Standard errors in parentheses; p values in italics.
The dependent variable is adjusted by subtracting NAICS 2-digit mean from the original value (Wang & Li, 2019)

Appendix D: Sample characteristics

Table D.1 Sample characteristics

Industry	Count
Accommodation and food services	9
Construction	7
Finance and insurance	63
Health care and social assistance	11
Information	17
Manufacturing	147
Mining, quarrying, and oil and gas extraction	12
Other services	8
Professional, scientific, and technical services	17
Real estate and rental and leasing	10
Retail trade	44
Transportation and warehousing	17
Utilities	25
Wholesale trade	30
Total	417

Total assets (million $)	Count
< 1000	77
1000-2999	129
3000-4999	72
5000-6999	52
7000-8999	22
9000 <	65
Total	417

Return on assets (%)	Count
< 0	22
0 - 2.99	45
3 - 5.99	184
6 - 8.99	131
9 <	35
Total	417

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