

The Role of Environmental and Social Clauses in Supply Contracts

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Abstract

This paper examines the use of environmental and social (E&S) clauses in supply contracts as an important tool for corporate customers to monitor and influence suppliers' E&S practices. Using a hand-collected sample of supply contracts, we find a substantial proportion of contracts include clauses mandating compliance, disclosure, inspection, and training related to suppliers' E&S practices. Customer reputational concerns, relationship-specific investments, and regulatory pressures significantly influence the inclusion of these clauses. Moreover, E&S clauses more directly associated with customer monitoring, specifically inspection and training requirements, are negatively related to suppliers' future E&S incidents. This association is more pronounced for corporate customers with higher E&S exposure, indicating that the benefits of proactive supplier monitoring through E&S clauses are greater for customers with elevated reputational risks. Overall, our evidence supports the view that E&S clauses in supply contracts serve as an important mechanism for customers to exert influence on suppliers' E&S practices.

Keywords: E&S Clauses, Supply Contracts, Monitoring, E&S Risk

1. Introduction

According to a recent survey by PricewaterhouseCoopers (PwC 2024) of more than 1,000 senior supply chain executives worldwide, disruptions associated with environmental and social (E&S) risks were identified as their top concern. To mitigate these risks and prevent irresponsible E&S practices, an increasing number of supply contracts now include provisions that grant customers the right to intervene when suppliers engage in such actions. The scope of these provisions can vary widely – from basic compliance with existing regulations and codes of conduct, to the disclosure of E&S metrics, to more stringent requirements such as third-party audits and employee training programs. A breach of one or more of these clauses may require remedial action, the payment of damages, or may entitle the customer to unilaterally terminate the contract. We refer to these contractual provisions addressing supply chain E&S issues as E&S clauses. In this paper, we examine the incorporation of E&S clauses in supply contracts as a contractual tool through which corporate customers monitor and enforce suppliers' E&S practices.

Drawing on efficient contracting theory (Jensen and Meckling 1976; Williamson 1985; Smith and Watts 1992), we view the inclusion of E&S clauses in supply contracts as the outcome of a cost-benefit trade-off. First, ESG incidents in supply chains can create negative spillovers for corporate customers. Customers thus have strong incentives to protect themselves from suppliers' E&S failures. Incorporating E&S clauses in supply contracts enables customers to safeguard reputational capital by requiring suppliers to meet minimum sustainability standards and by allowing enforcement when breaches occur. Second, when

customers or suppliers make relationship-specific investments, the risk of hold-up increases, as the alternative use of the relationship-specific assets is low. Efficient contracts are designed to mitigate such risks by adopting long-term safeguards that align incentives across parties (Joskow 1985). E&S clauses can function as one safeguard, promoting practices that enhance the durability and long-term value of the partnership. Third, the rise of E&S-related disclosure regulations has increased the regulatory exposure of corporate customers, prompting them to rely on E&S clauses to collect E&S-related information along their supply chains and to ensure transparent reporting of their supply chain due diligence activities. We thus predict that corporate customers are more likely to adopt E&S clauses when reputational concerns, relationship-specific investments, and regulatory pressures are high.

However, E&S clauses are not without costs. These include the customer's monitoring and enforcement efforts as well as the costly actions suppliers must undertake — such as providing employee training, engaging external auditors or investigators, and making substantial investments to improve their E&S performance. Ultimately, the inclusion of E&S clauses reflects a cost-benefit trade-off faced by both parties.

To test the above predictions, we hand-collect supply contracts from Securities and Exchange Commission (SEC) filings over the period 2000-2023. We then develop an E&S-specific dictionary tailored to supply contracts to identify E&S clauses. Among 2,611 supply contracts in our sample, 49% contain at least one E&S clause. The prevalence of E&S clauses has increased significantly over time, from approximately 25% in 2000 to over 70% in 2023. All contracts with E&S clauses include a basic requirement for compliance with regulations

or codes of conduct, while 27.6% contain additional provisions with more stringent requirements. Based on the scope of these provisions, we classify them into four categories: Disclosure – clauses requiring E&S-related information disclosure by suppliers; Inspection – clauses assigning responsibility for monitoring E&S compliance; Training – clauses requiring suppliers to train employees in E&S-related practices; Other – clauses not falling into the above categories, such as product recycling obligations and hazardous material safety. Approximately 23% of contracts in our sample contain disclosure clauses, 7% contain inspection clauses, 4% contain training clauses, and 8% contain other clauses. The substantial variation in the scope of E&S clauses suggests that contracting parties weigh the costs and benefits when including specific E&S-related provisions in supply contracts.

Next, we examine the factors that influence the inclusion of E&S clauses in supply contracts. Consistent with the reputational concern argument, we find that supply contracts are more likely to include E&S clauses when corporate customers face higher reputational risk, as proxied by advertising intensity, firm size, and public listing status. Conditional on customers being publicly listed, we also find a positive association between the inclusion of E&S clauses and analyst coverage, suggesting that investor demand pressures firms to improve E&S practices across their supply chains. Consistent with the regulatory pressure argument, we find that E&S clauses are more prevalent when customers are subject to mandatory E&S disclosure requirements in their home countries. Further, consistent with the idea that relationship-specific investments encourage suppliers and customers to emphasize long-term partnerships, E&S clauses are more likely to be present when the contract requires at least one

contracting party to make such investments. In line with the costly monitoring argument, we find that supply contracts are more likely to have E&S clauses when customers and suppliers operating in the same industry or country, presumably because customers' monitoring costs are lower when they are more familiar with their suppliers' business practices or geographically closer to their suppliers. We also find that suppliers' financial performance is positively associated with the likelihoods of E&S clause inclusion, supporting the argument that financially healthier suppliers are more willing and able to accept such costly contractual terms.

To further explore the role of regulatory pressure, we examine *the California Transparency in Supply Chains Act of 2010*, which requires large manufacturers and retailers operating in California to disclose their due diligence efforts to address human rights issues in their supply chains. We find an increase in the use of E&S clauses among corporate customers affected by the Act in the post-regulation period, with the effect concentrated in E&S clauses requiring inspection and training, two activities explicitly covered by the Act's disclosure requirements.

We next assess the effectiveness of E&S clauses in relation to customers' E&S risk exposure along the supply chain. To do so, we examine the association between E&S clauses and the frequency of suppliers' negative E&S incidents in the five years following contract initiation. We find that, on average, the inclusion of E&S clause is not significantly associated with suppliers' future E&S incidents. However, we observe a strong negative association between the inclusion of inspection and training clauses and suppliers' subsequent E&S

incidents. This negative association is stronger among corporate customers facing higher ex-ante E&S exposure, as proxied by the occurrence of customer E&S incidents prior to contract initiation. Taken together, these results suggest that E&S clauses can serve as an effective contractual mechanism for managing E&S risks along supply chains, provided they involve material and enforceable actions.

Our paper makes three main contributions to existing literature. First, while recent literature suggests that corporate customers can influence suppliers' ESG practices, there is limited direct evidence on the mechanisms through which such influence occurs. For example, Schiller (2017) and Dai, Liang, and Ng (2021) document a positive association between customers' E&S policies and their suppliers' E&S performance, suggesting a top-down influence from corporate customers to suppliers. She (2022) further demonstrates that suppliers enhance their human rights practices when customers are legally required to disclose due diligence procedures addressing human rights abuses. Our study complements this literature by illustrating the contractual mechanisms through which corporate customers exercise E&S oversight in supply chains.

Second, we contribute to the relatively underexplored area of supply contract design, which has been constrained by data limitations. Costello (2013) shows that supply contract duration and the use of financial covenants reflect the contracting parties' hold-up concerns and information asymmetry. Bushee, Kim-Gina, and Leung (2024) examine the clauses requiring customers to provide suppliers with demand forecasts and their implications for customers' public disclosure and suppliers' operating efficiency. We extend this line of

research by exploring a distinct contractual feature – E&S clauses– that address customers’ concerns about E&S risk exposure along the supply chain.¹

Third, our study contributes to the growing literature on sustainable supply chain management, particularly empirical and theoretical research examining whether and how customer monitoring and intervention can improve suppliers’ E&S performance (e.g., Locke and Qin 2007; Plambeck and Taylor 2016; Zhang et al. 2022; Chang, Christensen, and McKinley 2025; Distelhorst and Shin 2023; Feng, Li, Lu, and Shanthikumar 2022). We add to this literature by focusing on customer intervention through supply contract design, a channel that has received little empirical attention to date.

Our paper also adds to ongoing policy discussions on effective approaches to supply chain due diligence. In recent years, many countries have enacted regulations requiring corporate customers to conduct due diligence throughout their supply chains to strengthen E&S practices.² Regulators increasingly view supply contracts as a key instrument for firms to meet these obligations (Dadush, Schonfelder, and Streibelt 2024). Our findings offer timely insights for assessing the design and effectiveness of this contractual tool.

¹ Focusing on similarly designed environmental clauses used in loan contracts, Choy, Jiang, Liao, and Wang (2024) find that loan contracts are more likely to include environmental clauses and such clauses are more effective at improving borrowers’ environmental performance when borrowers face more stringent public enforcement increases.

² For example, the United States introduced the Uyghur Forced Labor Prevention Act (UFLPA) in 2021, which mandates companies to ensure their supply chains are free from forced labor. In 2023, Germany enacted German Supply Chain Act, which imposes due diligence obligations on companies that have significant business interests in Germany to comply with human rights and environmental standards. In 2024, the European Union (EU) passed Corporate Sustainability Due Diligence Directive (CSDDD), which requires corporate customers to implement human rights and environmental standards across their supply chains.

2. Literature Review and Hypothesis Development

The rationale of supplier-customer contracting goes back to the fundamental question of the boundary of a firm. Coase (1937) argues that a firm will expand until the costs of organizing an extra transaction within the firm equals the costs of carrying out the same transaction on the open market or by another firm. Corporate customers thus enter into contracts with suppliers to minimize transaction costs. However, Klein, Crawford, and Alchian (1978) point out that contracting parties may engage in opportunistic behavior especially when relationship-specific assets are invested. While explicit long-term contracts can solve opportunistic problems, they entail significant costs including specifying possible contingencies. Since the contracts may be incomplete, contractual provisions that are contingent on performance can be used to mitigate the conflicts between the contracting parties and allocate the decision rights from one party to the other (Aghion and Bolton 1992). With increasing regulatory and market pressure surrounding E&S risks, corporate customers have a strong incentive to ensure that their suppliers' E&S practices align with their own objectives. E&S clauses have thus emerged as contractual mechanisms that define suppliers' obligations regarding E&S practices and grant customers the right to actively monitor suppliers' E&S performance and intervene promptly in cases of heightened E&S risk.

Efficient contracting theory posits that contracts are designed to balance the costs and benefits of monitoring, enforcement, and flexibility, thereby minimizing agency and transaction costs (Jensen and Meckling 1976; Williamson 1985; Smith and Watts, 1992). We thus argue that corporate customers and suppliers weigh these costs and benefits when

deciding whether and how to include E&S clauses in supply contracts. We hypothesize that their incentives to incorporate such clauses increase with reputational concerns, relationship-specific investments, and regulatory pressures.

First, anecdotal and academic evidence suggests that negative E&S incidents on supply chain can spill over to corporate customers and cause significant damages to their brand reputation. For instance, Apple faced extensive negative media coverage when a China Labor Watch report found out that one of its suppliers' factories in China – Foxconn violated labor laws.³ Using firm-level reputation risk index from RepRisk, Dai, Li, and Ng (2021) find that suppliers' product safety scandals negatively affect both suppliers' and corporate customers' reputation in the following month. Large and visible firms with strong brand awareness attract more scrutiny from the public and are particularly vulnerable to the negative publicity of their suppliers' E&S practices (Servaes and Tamayo 2013). By incorporating E&S clauses in supply contracts, it legitimizes corporate customers' rights to monitor their suppliers' E&S practices and demand changes when suppliers engage in inappropriate E&S activities. We thus expect corporate customers with stronger reputational concerns to be more likely to incorporate E&S clauses in supply contracts.

Second, customers or suppliers often make relationship-specific investments. A supplier may invest in product lines that are tailored to the specific needs of a corporate customer. Similarly, customers may also make supplier-specific R&D investments. These sunk

³ <https://edition.cnn.com/2019/09/09/tech/apple-foxconn-china-labor-watch-trnd>.

investments have lower alternative values and increase switching costs for the supplier or customer. As a result, contractual provisions such as covenants can be used to reduce switching costs and serve as an early warning sign of the contracting party's performance (Costello 2013). Given the interconnected nature of suppliers' and customers' E&S performances within supply chains, it is in the interest of customers with relationship-specific investments to use E&S clauses to monitor and review the contracting party's E&S performance. Furthermore, to mitigate the hold-up problem, customers and suppliers often enter into long-term contracts (Joskow 1985). Consequently, relationship-specific investments prompt both parties to adopt a long-term perspective on their partnership, placing greater emphasis on E&S practices that enhance sustainable supply chains. Therefore, we predict that supply contracts involving relationship-specific investments are more likely to include E&S clauses.

Third, the proliferation of mandatory ESG disclosure regulations has significantly heightened firms' regulatory exposure, compelling corporate customers to incorporate E&S clauses to collect E&S data from suppliers and ensure regulatory compliance. For example, the EU's Non-Financial Reporting Directive (2014) requires the disclosure of E&S matters including supply chain issues. California's Transparency in Supply Chains Act (2010) requires firms to disclose their efforts to eliminate slavery and human trafficking throughout their supply chains. Corporate customers can thus use E&S clauses as a mechanism to demonstrate their due diligence efforts.

E&S clauses in supply contracts vary in format and scope, leading to differing stringency and costs. These clauses can encompass compliance obligations, reporting

requirements, due diligence requirements, and training obligations etc.⁴ E&S compliance clauses typically cross-reference an existing regulation or a supplier code of conduct to guide supplier activities. The supplier code of conduct directs suppliers in areas such as workforce and labor issues, ethical sourcing, and environmental commitments. To the extent that E&S compliance clauses are common practices or even boilerplates in supply contracts, specific E&S disclosure, inspection, and training requirements are likely to play a more significant role in aligning E&S interests between customers and suppliers. E&S disclosure clauses require suppliers to collect and report data related to their E&S activities such as greenhouse gas emissions, workplace incidents. Frequent and transparent E&S disclosure enables corporate customers to continuously monitor their suppliers' E&S risks. For example, Sabine Pass LNG requires its contractor to provide monthly progress reports about environmental, health and safety incidents, and other safety and security issues.⁵ Such information may send timely signal to customers, who could take actions to address or mitigate potential adverse effects should risks arise. Internally, collection of such information may also help suppliers set internal targets and conduct their own risk assessments. Moreover, E&S inspection clauses

⁴ These types of E&S clauses are largely in line with the operational management literature on sustainable supply chain. Awaysheh and Klassen (2010) categorize supplier socially responsible practices into four main areas: international standards aimed at protecting supplier human rights (e.g., SA8000), extended frameworks that capture supplier labor practices (e.g., Global Reporting Initiative), supplier codes of conduct that guide interactions between firms and their supply chain partners, and supplier social audits designed to ensure adherence to human rights and labor practices. In addition, Klassen and Vachon (2003) show that collaboration and evaluation between customers and suppliers have positive impacts on plant-level environmental investment. Gualandris et al (2015) argue that firms can address accountability for sustainability issues in their supply chain through identifying key measures, collecting and processing data, and verifying materiality, reliability and accuracy of the data.

⁵ https://www.sec.gov/Archives/edgar/data/3570/000110465904040332/a04-15072_1ex10d1.htm.

such as customer or third-party inspection play a direct role in enforcing suppliers' E&S obligations. These clauses specify customers' rights to inspect and review suppliers' E&S activities periodically and serve as a deterrence for irresponsible E&S practices. For example, corporate customers may conduct quarterly site visits to assess their suppliers' implementation of socio-economic and environmental programs. In addition, corporate customers can require suppliers to conduct training related to E&S issues to raise employee awareness and E&S compliance. For example, E&S training clauses may specify a supplier's responsibility for providing its employees with health, safety, and anti-corruption training.⁶

E&S clauses may also specify breach consequences, such as an agreed remediation process, contract termination, or the payment of damages. For example, if the supplier's environmental practices are inconsistent with good environmental practice and policy, as specified in the contract, the customer will be entitled to terminate the contract. In case of disputes of breach of contract, customers and suppliers can resort to litigation to solve the disputes. Nevertheless, as customers may be concerned about the confidentiality of the disputes and the negative impact on their reputation, private arbitration is likely to occur more often in practice (IBA Arbitration Committee 2023).⁷

Incorporating E&S clauses in supply contracts imposes costs on both customers and suppliers. For customers, the primary cost relates to monitoring and enforcement. Greater

⁶ <https://www.sec.gov/Archives/edgar/data/1376139/000137613920000045/cviq22020exhibit101.htm>.

⁷ Similarly, warranties and indemnities clauses in supply contracts seek suppliers' assurance in maintaining environmental and social risk certification requirements and indemnities for losses that arise from the breach of E&S contractual requirements (IBA Arbitration Committee 2023).

geographical distance between parties increases the cost of site visits to review suppliers' E&S practices. Similarly, operating in disparate industries elevates monitoring and enforcement costs for customers due to their unfamiliarity with suppliers' business practices. Furthermore, violations of E&S clauses can lead to significant litigation costs for dispute resolution. Suppliers, in turn, face considerable compliance costs, including E&S data collection, external auditor engagement, and employee training programs. Given that executed contracts reflect a mutual willingness to transact, suppliers with limited financial capacity are less likely to accept these terms. Consequently, we expect E&S clauses to be less prevalent in contracts where customers incur higher monitoring and enforcement costs or where suppliers are more resource constrained.

Although E&S clauses are implemented to monitor and enforce suppliers' E&S practices, their effectiveness in achieving intended objectives remains uncertain. The inclusion of these clauses, particularly those with basic compliance requirements, may serve as a mere box-ticking exercise or even a greenwashing tool, rather than a genuine monitoring effort. Questions of enforcement also persist: are these clauses consistently enforced, are independent auditors routinely engaged, and does employee training actually occur? Furthermore, these costly requirements could create adverse incentives, as resource-limited suppliers might cut corners or conceal potential problems. Therefore, it is an empirical question whether incorporating E&S clauses – and if so, which types – would be effective in mitigating supply chain E&S risks.

3. Data and Sample

We begin our sample selection by manually collecting Exhibit 10 and Exhibit 99 files attached to periodic reports, registration statements, and tender offers from the Electronic Data Gathering, Analysis, and Retrieval System (EDGAR) of SEC over the period of January 2000 to December 2023. Using Python, we parse the first 1,000 characters of each exhibit file to ensure that we capture the opening paragraph. We then identify potential supply contracts if the opening paragraph contains at least one term from {"Supply", "Procurement"} and at least one term from {"Agreement", "Contract"}. Each of the resulting documents is then manually reviewed. This screening process yields an initial sample of 7,222 supply contracts. Next, we manually exclude agreement amendments, contracts with missing or non-corporate contracting parties, and duplicate entries. We then identify the customer and supplier in each contract and match the customer firm to the Capital IQ database by firm name.⁸ Finally, we retrieve all relevant financial variables for these firms from Capital IQ, which provides standardized data for both public and private companies worldwide. After applying these filters, our final sample consists of 2,611 unique supply contracts involving 1,588 unique customer firms and 1,664 suppliers. Table 1 outlines the sample selection procedures.

[Insert Table 1 here]

Building on the identified supply contracts, we begin with a comprehensive keyword search to detect potential E&S clauses. Appendix Table B.1 provides details on the construction of

⁸ The firm name is matched to the Capital IQ database using the platform's built-in name-matching tool (SPCIQ Identifier Converter), which automatically identifies the match from its database.

the initial dictionary and the full list of keywords employed. From the identified contracts containing E&S-related keywords, we then randomly select 100 for manual review. After reviewing these contracts, we further develop a context-specific E&S keyword dictionary, tailored specifically for supply chain relationships (see Appendix Table B.2). Using the context-specific dictionary, we employ Python again to systematically parse the full text of each supply contract from the initial sample and flag those containing E&S-related keywords as potentially incorporating E&S clauses. Lastly, we manually review each flagged contract to verify the presence of E&S clause and identify which party or parties (supplier and/or customer) are subject to the clause. We document that 1,283 contracts contain E&S clauses applicable to suppliers, of which 395 also apply to customers.

We observe that these E&S clauses vary considerably across scope and requirements. We classify E&S clauses into four categories according to the scope of requirements. Disclosure – clauses requiring E&S-related information disclosure by suppliers; Inspection – clauses assigning responsibility for monitoring E&S compliance; Training – clauses requiring suppliers to train its employees in E&S-related practices; Other – clauses that extend beyond just compliance requirements but do not fall into the above categories, such as product recycling obligations and hazardous material safety. Examples of disclosure, inspection, training, and other clauses are provided in Appendix C.

Figure 1 presents the frequency of various E&S clauses across supply contracts. Among the individual E&S clauses, disclosure clauses are the most prevalent, appearing in 591 contracts. Inspection clauses, which assign responsibility for monitoring E&S compliance,

are found in 186 contracts. Training clauses are the least common, with only 93 occurrences.

Figure 2 presents the time trend in the inclusion of E&S clauses in supply contracts from 2000 to 2023. The overall share of contracts containing at least one E&S clause has increased steadily over time, rising from approximately 25% in 2000 to over 70% in 2023. Among the subcategories of E&S clauses, disclosure clauses appear most frequently. Inspection and training clauses have also seen a gradual increase over time and continue to represent a meaningful share of E&S-related contractual clauses. The figure reflects the growing reliance on contractual mechanisms to embed E&S considerations in supply chain relationships, particularly since 2010. Interestingly, we observe a decline in the use of E&S clause in 2022, potentially due to the ESG backlash in 2022.

3.4 Geographical and Industry Distribution

Table 2 presents the country distribution of customers and suppliers in our sample. Panel A presents the distribution of customer firms by headquarter country. The sample includes customers from over 60 countries, though it is heavily concentrated in the United States, which accounts for 85.79% of all observations. The remaining 14.21% of customer firms are internationally distributed, with the largest shares from the United Kingdom (1.61%), Switzerland (1.19%), Japan (1.11%), Germany (1.07%), Canada (1.42%), and Ireland (1.03%). Most other countries contribute only a small number of observations, typically below 0.5% each and collectively representing 5.34% of the sample. This skewed distribution reflects the dominant role of U.S.-based customer firms in our sample.

Panel B reports the distribution of suppliers' headquarter countries. Similarly, the

United States dominates the supplier base, representing 68.56% of all supplier observations, and Switzerland (3.41%), Germany (3.22%), the United Kingdom (3.14%), and Canada (2.80%) follow. Countries outside of the Top ten supplier countries account for 10.83% of the sample.

[Insert Table 2 here]

Table 3 presents the distribution of E&S clauses across suppliers' industries based on Fama-French 12 industry classification. The sample is heavily concentrated in the Healthcare, Medical Equipment, and Drug industry, consistent with prior studies examining supply contracts (e.g., Costello 2013). There is substantial cross-industry variation in E&S clauses inclusion. Resource-intensive industries such as Oil, Gas, and Coal Extraction and Products and Chemicals and Allied Products exhibit relatively high rates of E&S clauses inclusion, with E&S clauses appearing in over 50% of contracts. However, Wholesale and Retail industries have only one out of three supply contracts including E&S clauses.

This table further details individual E&S clauses – disclosure, inspection, training, and other clauses – within each industry. Disclosure clauses are the most prevalent clauses beyond compliance across sectors, while inspection and training clauses are more concentrated in industries such as manufacturing and utilities, which are often subject to higher E&S compliance risks. These patterns suggest that corporate customers design E&S clauses to mitigate industry-specific supplier risks.

[Insert Table 3 here]

4. Determinants of ES Clauses in Supply Contracts

4.1. Research Design

We begin our empirical analyses by documenting the factors that influence the inclusion of E&S clauses in supply contracts. Specifically, we estimate the following ordinary least squares (OLS) model at the supply contract level:

$$\begin{aligned} E\&S_{i,j,t} = & \beta_0 + \beta_1 Customer_Ad_{i,t-1} + \beta_2 Customer_Size_{i,t-1} + \\ & \beta_3 Relationship\ Specific\ Investment_{i,t-1} + \beta_4 Foreign\ Supplier_{i,t-1} + \\ & \beta_5 Same\ Industry_{i,t-1} + \beta_6 Customer_ROA_{i,t-1} + \beta_7 Customer_Leverage_{i,t-1} + \\ & \beta_8 Customer_Public_{i,t-1} + \beta_9 Customer_US_{i,t-1} + \beta_{10} Disclosure_Mandate + \\ & Customer_Industry\ FE + Year\ FE + \varepsilon. \end{aligned} \quad (1)$$

The dependent variable can take form of five indicators: *E&S*, *Disclosure*, *Inspection*, *Training*, and *Others*, respectively, capturing the presence of E&S clauses in a supply contract between customer i and supplier j in year t . *E&S* equals one if at least one E&S clause is present in the supply contract, and zero otherwise. The remaining indicators capture the presence of individual E&S clause types in the supply contract.

We focus on three factors that affect the customer's incentive to include E&S clauses in supply contracts. To capture customers' reputational concern, we use advertising intensity (*Customer_Ad*), firm size (*Customer_Size*), and public listing status (*Customer_Public*). Firms with higher advertising intensity typically operate in consumer-facing industries, where consumers awareness of corporate brand and reputation is generally higher (Koslow, Sasser, and Riordan 2006;). These firms face greater pressure from socially conscious consumers to act responsibly (Servaes and Tamayo 2013), and such pressure may extend across their entire

value chain. Larger and publicly listed firms likewise face greater visibility and scrutiny from shareholders and other stakeholders and therefore bear higher reputational risk (Dimson, Karakaş, and Li 2015). To capture relationship-specific investment, we identify whether the supply contract specifies either the customer or the supplier makes a relationship-specific investment related to the exchange (*Relationship Specific Investment*). To capture customers' regulatory pressure, we use the presence of country-level E&S disclosure mandates (*Disclosure_Mandate*). We obtain data on country-level E&S disclosure mandates from the Carrot & Sticks reports following prior literature (e.g., Iliev and Roth 2023; Wang 2023).⁹

To capture customers' monitoring and enforcement costs, we create indicators for instances where the customer and supplier are located in different countries (*Foreign Supplier*) or operate in different industries (*Same Industry*), as both geographic and operational distances create increase these costs.

In addition, we include other firm-level and contract-level variables that may influence customers' choices. These include customer profitability (*Customer_ROA*), leverage (*Customer_Leverage*), and location (*Customer_US*). We also include customer industry fixed effects and year fixed effects to account for cross-sectional variation across industries and years. We cluster standard errors using robust standard errors, following Costello (2013).

⁹ We follow Wang (2023) to complement the CSR rules published in Carrot & Sticks reports with the Sustainable Stock Exchange Initiative (SSE), Initiative for Responsible Investment (IRI) at Harvard University, and Global Reporting Initiative. We only include CSR regulations that are mandatory and apply to all firms. Following Iliev and Roth (2023), we define a regulatory change as the first year when the rule was passed where the customer is located.

4.2. Descriptive Statistics

Table 4 reports descriptive statistics. About 22% of contracts specify relationship-specific investments (*Relationship Specific Investment*), consistent with prior literature emphasizing contractual rigidity in high-commitment relationships (e.g., Costello 2013). About 36% of suppliers are located in a different country from the customer (*Foreign Supplier*), and 59% of buyer-supplier pairs operate within the same two-digit SIC industry (*Same Industry*). We measure customer firm characteristics in the fiscal year prior to the year in which the contract was signed. *Customer_Size* is defined as the natural logarithm of one plus the customer's total revenue and has a mean of 5.43. *Customer_Ad*, which captures advertising intensity, is measured as the ratio of advertising expenses to total revenue and averages 0.009. *Customer_Leverage* is computed as the ratio of total liabilities to total assets, with a mean of 0.516. *Customer_ROA*, defined as EBITDA scaled by total assets, has a mean of -0.05. *Disclosure_Mandate* equals one if the customer enters the contract after the customer's located country mandated ESG information disclosure, and zero otherwise. With a mean value of 0.092, this indicates that ESG disclosure mandates applied in about 9.2% of the customer-years in our sample. In addition, approximately 6% of customers are private firms, and 86% of them are based in the United States.

[Insert Table 4 here]

4.3. Baseline Results

Table 5 reports the baseline results of the inclusion of E&S clauses in supply contracts. Column (1) reports the results controlling for customer characteristics and year fixed effects.

In column (2), we further control for customer industry fixed effects. The R-squared increases from 0.103 to 0.165, indicating that industry norms and practices account for a significant share of the variation in E&S clause adoption across supply contracts. We thus include customer industry fixed effects throughout the rest of analyses. Columns (3) through (6) re-estimate the specification from Column (2), replacing the dependent variable with individual E&S clauses—Disclosure, Inspection, Training, and Others.

Turning to customer characteristics, the coefficients on *Customer_Ad* remain positive and statistically significant across various specifications (except for *Others*), indicating that customers with higher advertising intensity are more likely to incorporate E&S clauses into supply contracts. Economically, a one-standard-deviation increase in advertising intensity is associated with meaningful changes in the inclusion of E&S clauses. The effects are most pronounced for high-commitment clauses: the likelihood of including E&S training clauses increases by 48.97%, and the likelihood of including inspection requirements increases by 22.64%. We also observe a 6.20% and 1.07% increase in the inclusion of disclosure and other clauses, respectively, and a 2.62% increase in the adoption of general E&S related clauses. The positive and statistically significant coefficients on customer size (*Customer_Size*) and public listing status (*Customer_Public*) indicate that larger and publicly listed customers are more likely to adopt E&S clauses in supply contracts. Taken together, these results are consistent with our expectation that customers with stronger reputation concerns are more inclined to incorporate E&S clauses into supply contracts.

The positive and statistically significant coefficient on relationship-specific investment

(*Relationship Specific Investment*) across multiple specifications suggests that customers facing severe hold-up problems and thus higher switching costs are more likely to adopt E&S clauses in their supply contracts. Economically, the relationship-specific investment is associated with a 22.57% increase in the likelihood of including disclosure clauses and a 16.81% increase in inspection clauses. Additionally, we observe an 8.76% increase in the inclusion of general E&S clauses.

We also observe that customers' regulatory pressure plays a role. Specifically, in Column (7), we examine the standalone influence of E&S disclosure mandates (*Disclosure_Mandate*) on the incorporation of E&S clauses. In Column (8), we re-estimate Equation (1) by including *Disclosure_Mandate* as an additional variable of interest alongside the other controls. The coefficients on *Disclosure_Mandate* are consistently positive and statistically significant. Economically, customers subject to E&S disclosure mandates are likely to increase E&S clauses in their supply contracts by 21.59%. Collectively, these results suggest that customers with greater regulatory pressure are more likely to incorporate E&S clauses in supply contracts.

We also find some weak evidence that customers and suppliers being in the same industry is positively related to the incorporation of E&S clauses in supply contracts (column (1)) and foreign supplier is negatively associated with the inclusion of such clauses (column (3)), suggesting that familiarity between customers and suppliers lowers customers' costs of monitoring suppliers' E&S practices.

Overall, these results suggest that reputation concerns, relationship-specific investment,

and regulatory pressure significantly shape the incorporation of E&S clauses in supply contracts.

[Insert Table 5 here]

Building on the evidence for reputational concerns, we further investigate the role of capital market pressure by analyzing the subsample of contracts with publicly-listed customers. This allows us to examine whether market participants such as analysts and active institutional investors influence the inclusion of E&S clauses in supply contracts.

Table 6 reports the result. In addition to reputation concerns, supply contracts are more likely to include E&S clauses when corporate customers have greater analyst following (*Customer_Coverage*) and lower passive ownership (*Customer_IndexOwn*). These patterns suggest that increased monitoring and attention from financial analysts and non-passive institutional investors are associated with stronger E&S practices along the supply chain. Other customer characteristics remain generally consistent with the full sample results, indicating that the determinants of E&S clauses in publicly listed customer contracts largely mirror broader patterns after controlling for market monitoring and scrutiny. Overall, these findings highlight that the role of market oversight in shaping E&S practices along the supply chain.

[Insert Table 6 here]

4.4. Supplier Characteristics and E&S Clauses

So far, we have examined the role of customer characteristics that influence the design of E&S clauses in supply contracts. However, suppliers' financial health and incentives are

important to the enforcement of the E&S clauses. Next, we examine the role of supplier characteristics in the incorporation of E&S clauses in addition to that of customer attributes.

Table 7 reports the results. The sample is slightly smaller due to the availability of supplier characteristics data. Suppliers' advertising intensity (*Supplier_Ad*) is positively associated with the incorporation of general E&S clauses (column (2)), suggesting that suppliers with greater reputational concerns may also be more willing to engage in E&S practices. Supplier profitability (*Supplier_ROA*) is also positively related to the presence of E&S clauses (columns (1) and (2)), indicating that financially strong suppliers are more likely to engage in E&S practices. This aligns with the idea that suppliers with greater resources are better positioned to implement costly sustainable practices. Other supplier characteristics, such as leverage (*Supplier_Leverage*), size (*Supplier_Size*), and public listing status (*Supplier_Public*), show varied associations across different types of E&S clauses, reflecting the complexity of how supplier characteristics shape E&S contracting.

Overall, these results suggest that suppliers' reputation concerns and financial strength play an important role in the adoption of E&S clauses in supply contracts.

[Insert Table 7 here]

4.5. California Supply Chain Transparency Act and E&S Clauses

In this section, we shift our attention to the role of the California Supply Chain Transparency Act, which mandates corporate disclosure of supply chain due diligence to address their suppliers' human rights abuses (She 2022), in the inclusion of E&S clauses in

supply contracts.

Following She (2022), we manually collected California Statements from customers' corporate websites. Firms with a California Statement are defined as the treated group, while those without one form the control group (*California Act*). The variable *Post* equals one for the period after the adoption of the California Act in 2011, and zero otherwise. Our variable of interest is the interaction term $California\ Act \times Post$, which captures how the implementation of the regulation is associated with changes in E&S clause incorporation.

Table 8 reports the results. $California\ Act \times Post$ is positively and significantly related to the incorporation of *Inspection* and *Training* clauses, suggesting that firms affected by the California Supply Chain Transparency Act primarily increase E&S clauses related to inspection and training requirements in the post-regulation period. This pattern aligns closely with the regulation's objectives, as the effects concentrate on clauses directly related to human rights and labor practices in the supplier base.

Overall, these findings suggest that regulations targeting supply chain practices can play an important role in promoting E&S adoption through contractual mechanisms.

[Insert Table 8 here]

5. E&S Clauses and Future Supplier E&S Incidents

Next we investigate whether the inclusion of E&S clauses is associated with suppliers' future E&S risks.

5.1 Data and Sample

We proxy suppliers' future E&S risks using their subsequent negative E&S incidents collected by RepRisk, a widely used source for identifying firm-level E&S risks (e.g., Houston and Shan 2022; She 2022). RepRisk compiles daily indicators of negative ESG-related events for over 200,000 public and private firms worldwide since 2007. It does so by daily screening news and reports from more than 100,000 media outlets, stakeholder organizations, and third-party sources in 23 languages. News is classified into 28 categories. Our RepRisk data covers the period of 2007 - 2023. Following prior literature (e.g., Gantchev, Giannetti, and Li 2022; He, Kahraman, and Lowry 2023), we focus on E&S incidents covering issues on climate change, pollution, waste management, labor conditions, child labor, and human rights abuses.

To construct the sample, we retain the suppliers from our main analyses and assign each supplier the year entering its supply contract. If a supplier has signed multiple contracts at different times, we keep the earliest one. We then construct a supplier-year panel data covering a five-year window before and after the contract year and merge it with E&S incidents from RepRisk.¹⁰ This allows us to explore how suppliers' E&S risks change before and after the incorporation of E&S clauses in supply contracts.

5.2. Research Design

We use the following OLS model to test the relation between E&S clauses and suppliers' future E&S incidents:

$$E\&S_Inc_{i,j,t} = \beta_0 + \beta_1 E\&S_{i,t-1} + \beta_2 Supplier_Size_{i,t-1} + \beta_3 Supplier_Ad_{i,t-1} + \beta_4 Supplier_ROA_{i,t-1} + \beta_5 Supplier_Leverage_{i,t-1} + \beta_6 Supplier_Public_{i,t-1} +$$

¹⁰ We adopt a five-year window because the median contract duration in our sample is five years.

$$\text{Supplier FE} + \text{Year FE} + \varepsilon, \quad (2)$$

where the dependent variable, *E&S_Inc*, is defined as the inverse hyperbolic sine (IHS) transformation of the count of environmental and social incidents for firm *i* in year *t*.¹¹ *E&S*, *Disclosure*, *Inspection*, *Training*, and *Others* are defined in the same ways as in Model (1). We control for supplier characteristics that may be related to E&S risks, including suppliers' size (*Supplier_Size*), advertising intensity (*Supplier_Ad*), profitability (*Supplier_ROA*), leverage (*Supplier_Leverage*), and public listing status (*Supplier_Public*). Supplier and year fixed effects are also included to account for unobserved heterogeneity across suppliers and over time.

5.3. Baseline Results

Table 9 presents the result that relates E&S clauses to suppliers' future environmental and social incidents. Columns (1) – (5) examine the presence of any E&S clauses and individual E&S clauses, respectively. The results indicate that the presence of any E&S clauses, disclosure, or other clauses are not significantly related to future incidents. In contrast, inspection clauses exhibit a consistently negative and statistically significant effect, indicating that suppliers subject to inspection clauses experience fewer E&S incidents in the future. These results suggest that clauses requiring tangible are more effective role in promoting E&S practices. There is also evidence that training clauses reduce future E&S incidents for suppliers, suggesting that providing employees with practical guidance on safe and responsible

¹¹ We use the IHS transformation because it behaves similarly to the logarithmic transformation for large values while being well-defined at zero, thereby accommodating the skewed distribution of incident counts (Bellemare and Wichman 2020).

operational practices can help prevent incidents at the source.

The stronger effects of inspection and training clauses, relative to general E&S or disclosure clauses, are consistent with the idea that enforcement and action-oriented clauses are more effective than symbolic or informational ones. Inspection and training clauses can directly influence suppliers' behavior through monitoring, feedback, and capability building, thereby improving compliance and mitigating E&S risks. In contrast, general E&S or disclosure clauses are often formal or informational in nature, lacking the enforcement and feedback needed to drive real changes in suppliers' E&S risks. Taken together, these findings highlight that E&S clauses incorporating tangible actions and capacity-building features are more likely to yield measurable risk-reducing outcomes.

[Insert Table 9 here]

5.4. Cross-Sectional Analyses

We next turn to cross-sectional analyses to explore how the effect of E&S clauses on suppliers' E&S incidents varies with customers' ex-ante E&S exposure.

Customers with higher ex-ante E&S risks tend to have stronger incentives to enforce inspections and training, thereby enhancing the effect of E&S clauses. We capture customers' ex-ante E&S risks using their prior E&S incidents, *Customer_Prior_Incidents*, which equals one if the customer has E&S incidents in the previous five years before the contract initiation, and zero otherwise. Table 10 shows that the effect of Inspection and Training clauses is stronger when customers have experienced prior E&S incidents, suggesting that customers' E&S exposure can strengthen the effectiveness of E&S clauses.

[Insert Table 10 here]

6. Conclusion

In this paper, we provide initial evidence on the economic factors that influence the incorporation of E&S clauses in supply contracts. The inclusion of E&S clauses related to compliance, disclosure, inspection, and training requirements has increased significantly over time. We find that customer reputational concern, relationship-specific investment, and customer regulatory compliance play a significant role in the inclusion of these E&S clauses. Furthermore, clauses with more tangible actions such as inspections and supplier E&S training are related to a reduction in future E&S incidents among suppliers. These findings suggest that contracting tools such as E&S clauses are important mechanisms through which corporate customers can ensure that suppliers' E&S practices are aligned with their objectives, thereby reducing supply-chain E&S compliance risk. We also provide further empirical support for contracting theories that contractual tools are effective in reducing the conflicts between customers and suppliers in the case of non-financial risk such as E&S risk.

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Appendix A. Variable Definition

Variable	Variable Definition	Data Source
<i>Determinant Analyses</i>		
E&S	An indicator variable that equals one if the supply contract incorporates at least one E&S clause, and zero otherwise.	SEC Filings
Disclosure	An indicator variable that equals one if the supply contract incorporates any clause requiring E&S-related information disclosure by suppliers, and zero otherwise.	SEC Filings
Inspection	An indicator variable that equals one if the supply contract incorporates any clause assigning responsibility for monitoring E&S compliance, and zero otherwise.	SEC Filings
Training	An indicator variable that equals one if the supply contract incorporates any clause requiring suppliers to train its employees in E&S practices, and zero otherwise.	SEC Filings
Others	An indicator variable that equals one if the supply contract incorporates E&S clauses that does not fall under disclosure, inspection, or training requirements, such as product recycling obligations and hazardous material safety, and zero otherwise.	SEC Filings
Customer_Ad	Measured as the ratio of the customer's advertising expenses to total revenue in the year prior to entering the supply contract.	Capital IQ
Customer_Coverage	Measured as the natural logarithm of one plus the number of analysts following the customer in the year prior to entering the supply contract.	I/B/E/S
Customer_IndexOwn	Measured as the percentage of index institutional ownership of the customer in the year prior to entering the supply contract.	Thomson-Reuters 13F
Customer_Leverage	Measured as the ratio of the customer's total liability to total assets in the year prior to entering the supply contract.	Capital IQ
Customer_Public	An indicator variable that equals one if the customer's market capitalization is not missing, and zero otherwise.	Capital IQ
Customer_ROA	Measured as the ratio of the customer's EBITDA to total assets in the year prior to entering the supply contract.	Capital IQ
Customer_Size	Measured as the natural logarithm of one plus the customer's total revenue in the year prior to	Capital IQ

Variable	Variable Definition	Data Source
<i>Determinant Analyses</i>		
	entering the supply contract.	
Customer_US	An indicator variable that equals one if the customer is located in the U.S., and zero otherwise.	Capital IQ
Disclosure_Mandate	An indicator variable that equals one if the customer enters the contract after the customer's country mandated ESG information disclosure, and zero otherwise.	Carrots & Sticks
Foreign Supplier	An indicator variable that equals one if the supplier and the customer are located in different countries, and zero otherwise.	Capital IQ
Relationship Specific Investment	An indicator variable that equals one if the supply contract specifies that the customer or supplier makes an investment related to the exchange, and zero otherwise.	SEC Filings
Same Industry	An indicator variable that equals one if the customer and the supplier are in the same SIC 2-digit industry, and zero otherwise.	Capital IQ
Supplier_Ad	Measured as the ratio of the supplier's advertising expenses to total revenue in the year prior to entering the supply contract.	Capital IQ
Supplier_Leverage	Measured as the ratio of the supplier's total liability to total assets in the year prior to entering the supply contract.	Capital IQ
Supplier_Public	An indicator variable that equals one if the supplier's market capitalization is not missing, and zero otherwise.	Capital IQ
Supplier_ROA	Measured as the ratio of the supplier's EBITDA to total assets in the year prior to entering the supply contract.	Capital IQ
Supplier_Size	Measured as the natural logarithm of one plus the supplier's total revenue in the year prior to entering the supply contract.	Capital IQ
Supplier_US	An indicator variable that equals one if the supplier is located in the U.S., and zero otherwise.	Capital IQ
California Act	An indicator variable that equals one if the customer provides a California Statement on its corporate website, and zero otherwise.	Company Websites
Post	An indicator variable that equals one for the period after the adoption of the California Act in 2011, and zero otherwise.	

Variable	Variable Definition	Data Source
<i>Determinant Analyses</i>		
<i>Consequence Analyses</i>		
E&S_Inc	Measured as the inverse hyperbolic sine transformation of the total number of environmental and social incidents.	RepRisk
Customer_Prior_Incidents	An indicator variable that equals one if the customer has E&S incidents in the past five years, and zero otherwise.	RepRisk
Large	An indicator variable that equals one if the supplier size is greater than or equal to the sample median, and zero otherwise.	Capital IQ

Appendix B. E&S Keyword Dictionary in Supply Contracts

Table B.1. Broad E&S Keyword Dictionary

We construct the initial dictionary following Dai, Ding, and Gao (2023). Their dictionary, extracted from conference call contexts, is preferred due to its coverage of a wide range of topics and its origin in a rich, dynamic linguistic environment, yielding a more comprehensive and flexible keyword set.

Category	Keywords
Community	donat! ; charit! ; philanthrop! ; national equity fund ; housing initiative ; enterprise foundation ; (youth & job training) ; (supp;t & education) ; volunteer program ; plant closing ; (quality of life ; tax base ; property values!) & (negative ; advers! ; bad ; controvers!)) ; (indigenous people! & controvers!) ; (tax & (disput! ; controvers!)) ; community opposition ; (stop.* fund ; stop.* supp;t)
Diversity	(women ; minority) & (ceo ; promotion ; board of director ; work benefits ; life benefits ; contracting)) ; (disab! & employment) ; ((gay & lesbian) & (policy ; employee)) ; (affirmative action & (controver! ; (fines AND NOT art) ; penal!)) ; (diversity & (controver! ; (fines & NOT art) ; penal!))
Employee Relations	no-layoff ; profit! shar! ; employee involvement ; (union relation! ; retirement benefit! ; (health & safety & program)) & (csr ; social responsibl! ; social benefit!)) ; ((union relation! ; (employee & (health ; safety))) & (worsen ; deteriorat! ; poor concern! ; controvers! ; violation! ; fines ; penal!)) ; (layoff ; lay-off ; workforce reduc! ; staff reduc!) ; (pension & (under funded ; concerns ; controvers!))
Environment	environment! friend! ; environment benefit! ; (eco! friend! ; pollution prevent! ; clean! energy!)) ; ((hazardous waste ; clean air act ; clean water action ; environmental regulation) ; toxic chemical! ; agricultural chemical! ; climate change) & (fines ; penal! ; violation! ; controvers! ; neg!)) ; oil spill!
Human Rights	human rights ; ((positive ; good) & south africa) ; (indigenous people & (sovereignty ; land ; culture OR human rights OR relations)) ; ((labor rights OR union relation) & (foreign ; overseas) & NOT (controversy ; concern))) ; ((south africa ; northern ireland ; burma ; mexico ; international labor) & controvers!) ; (human rights & controvers!)
Product	((innovative product ; (leader & innovation ; R&D ; (research & development))) & (social! benefit! ; csr ; social respons! ; economically disadvant!)) ; (product & economical! disadvantag!)) ; (product! & social! benefit!) ; product safety ; antitrust violation ; consumer fraud ; defective product ; product recall

Table B.2. E&S Clause Keyword Dictionary for Supply Chain Context

Keywords ¹²		
Air pollution	Data (information) privacy (protection/security)	Harsh treatment
Animal welfare	Deforestation	Hazardous materials (substance(s)/substance(s)/waste)
Anti (Against/No)-Bribery (corruption/money laundering/terrorism financing)	Discrimination	Human right
Antitrust compliance	Diversity and inclusion	Human trafficking
Biodiversity	Environment(al), Health, Safety (many patterns)	Humane treatment
Carbon emission	Environmental laws (monitoring/plan(s)/policy/procedure(s)/protection/regulation(s)/report(s)/requirement(s)/rule(s))	Illegal (Improper) payments
Carbon footprint	ESG	Pollution Prevention
Child Labor (Labour)	Fair (Equal) treatment(opportunity)	Safety (Security) Data Sheet(s)
Climate change	Forced labor (labour)	Safety (Security) Reports
Compulsory Labor (Labour)	GHG	Scope 1 (2/3)
Confidentiality	Global warming	Slavery
Conflict minerals	Good Utility Practice Hazards	Sustainability
Corporate Social Responsibility	Greenhouse Gas	Waste
CSR	Harassment	

¹² The above keyword groups are flexible in form. For example, variations in word order are allowed, case and singular/plural distinctions are ignored, and words may be separated by spaces, punctuation marks, or conjunctions.

Appendix C. Examples of E&S Clauses

Below, we provide examples of E&S clauses from supply contracts filed with the SEC, along with links to the corresponding filings.

Disclosure Clauses

Example #1

(<https://www.sec.gov/Archives/edgar/data/1694665/000169466521000037/a12312020exhibit1017.htm>)

Safety Information. Prior to the signing of any Proposal, Client shall have provided Cambrex with all environmental, health and safety information available to Client relating to Client-Supplied Materials or Product, including available material safety data sheets. Client shall promptly provide Cambrex any updates to such documentation that become available for so long as Cambrex is performing Services using such Client-Supplied Materials or Product.

Example #2

(https://www.sec.gov/Archives/edgar/data/845434/000110465906038754/a06-12926_1ex10d1.htm)

Environmental Requirements. Without limiting the generality of any other provision of this Agreement, Supplier warrants and agrees that:

MSDS. Supplier will provide complete and accurate Material Safety Data Sheets (MSDS) for Products to InFocus prior to shipment.

Environmental Information. Supplier will furnish InFocus any information reasonably requested by them to confirm compliance with applicable laws or to determine the environmental effects of materials included in the Products or in their packaging.

Example #3

(<https://www.sec.gov/Archives/edgar/data/91882/000075473708000031/exhibit10-01.htm>)

Material Safety Data Sheets. To the extent required by applicable Law, Contractor shall provide to Owner Material Safety Data Sheets covering Hazardous Materials to be furnished, used, applied, or stored by Contractor, or any of its Subcontractors, at the Site in connection with the Work. Contractor shall coordinate with Owner's Project Director to provide a listing of such Hazardous Materials and their quantities at the Site for purposes of chemical inventory reporting pursuant to 40 C.F.R. Part 370 and similar state regulations.

Inspection Clauses

Example #1

(<https://www.sec.gov/Archives/edgar/data/1200375/000119312510076663/dex107b.htm>)

Inspection by Codexis. Representatives of Codexis (i) shall upon Codexis' request be permitted to review Arch's quality assurance/quality control and Environmental, Health and Safety procedures; and (ii) may, during normal business hours and

(b) Inspections by Third Party Customers of Codexis. Representatives of Codexis' Third Party customers for Products may, during normal business hours and with reasonable advance notice, conduct a supplier audit of the applicable Manufacturing Facility(ies); provided, that each such audit shall not extend beyond two (2) Business Days per facility and, unless deficiencies are discovered during any such audit, shall not be conducted more than once by any particular Third Party customer at any particular Manufacturing Facility in a particular calendar year. Arch shall permit such representatives to inspect the applicable Manufacturing Facility to verify that the Products are being manufactured and supplied in accordance with the applicable Product Specification, cGMP, Environmental, Health and Safety standards and Applicable Law. Arch shall promptly remedy or cause the remedy of any deficiencies that may be noted in any such inspection.

Example #2

(<https://www.sec.gov/Archives/edgar/data/1107332/000095012310087540/v56901exv10w1.htm>)

Audit and Inspection Rights.

(a) EHS and Insurance Audit Rights. DENDREON shall have the right to once per calendar year audit and inspect those portions of the Suite used in the manufacture, generation, storage, testing, treatment, holding, transportation, distribution or other handling or receiving of the Product and Materials, for purposes related to insurance of the equipment, quality and/or an environmental, health and safety audits and inspection.

(b) Quality Audit and Inspection Rights. DENDREON shall have the right to once per calendar year, as otherwise permitted in the Quality Agreement, or more frequently if there is cause, and as otherwise set forth in the Quality Agreement, audit and inspect those portions of the Suite used in the manufacture, generation, storage, testing, treatment, holding, transportation, distribution or other handling or receiving of the Product and Materials, for purposes including but not limited to any insurance and/or environmental, health and safety audits and inspections and conformance with the Specifications. DENDREON shall have the right to audit and inspect all inventory of Product and Materials contained at the Suite.

Example #3

(<https://www.sec.gov/Archives/edgar/data/1583103/000158310313000013/exh107-formofmastertermina.htm>)

Inspection. During Normal Business Hours and upon prior Notice to Company, Customer may:

(a) inspect the Terminal, including health, safety, and environmental audits by inspector(s) chosen by Customer; (b) make physical checks of Products in storage at the Terminal, (c) audit Company's health, safety, environmental, and operational records relating to the performance of this Agreement and otherwise observe such performance, and (d) subject to the provisions of Section 8.02, enter upon the Terminal property for any of the foregoing purposes. For clarity, none of the rights identified in this Section 16.02 shall be exercised by Customer in such manner as to substantially interfere with or diminish Company's complete control and

responsibility for the operation of the Terminal

Training Clauses

Example #1

(https://www.sec.gov/Archives/edgar/data/1138400/000114420410012934/v176821_ex10-56.htm)

HEALTH, SAFETY & ENVIRONMENTAL PROTECTION POLICY

2. The persons engaged in performing the manufacture shall have adequate training in health, safety and environmental protection issues associated with handling hazardous materials.

Example #2

(https://www.sec.gov/Archives/edgar/data/1285043/000110465907061433/a07-19200_1ex10d3.htm)

The Contractor is responsible for and will provide all necessary training of Contractors' personnel so that they will be familiar with the pertinent Company rules and regulations, and can safely perform the job.

Example #3

(https://www.sec.gov/Archives/edgar/data/921299/000156459020008161/fgen-ex1028_711.htm)

Safety. Catalent shall in accordance with Catalent's internal procedures and Applicable Law, inform its employees, contractors and other personnel of any known or reasonably ascertainable chemical and processing hazards associated with the Raw Materials, FibroGen-supplied Materials, Product, or any Wastes generated through performance of the Manufacturing Services hereunder, and provide such persons with training in the proper methods of handling and disposing of such items. Catalent shall be responsible for maintaining safety procedures and required training documentation for Catalent's handling and manufacture of the Product, FibroGen-supplied Materials, and all Raw Materials and components thereof, and for the generation, treatment, storage and disposal of Wastes relating thereto all of which shall comply with all applicable national and local environmental and occupational safety and health requirements where the Waste is located.

Other Clauses

Example #1

(https://www.sec.gov/Archives/edgar/data/1758766/000175876622000129/stem-10xq2022q2_ex102xmast.htm)

Recycling of Product. At the end of the functional life or end of the LCW Warranty Period associated with the Product, whichever occurs first, upon written notice from Customer, Supplier agrees to make all reasonable efforts to recycle the Product or Product Components in an environmentally responsible way;

Example #2

(https://www.sec.gov/Archives/edgar/data/1521476/000101968714003185/scrips_8ka2-ex1001.htm)

Carbon Taxes. Supplier shall be solely responsible for (a) any tax liabilities levied by any governmental body that relate in any way to carbon emissions, regardless of whether such carbon emission tax liabilities are levied against Supplier or SCRIPSAMERICA, and (b) purchasing, at Supplier's cost, any carbon emissions credits that would in the future be required for Supplier to perform its obligations under this Agreement.

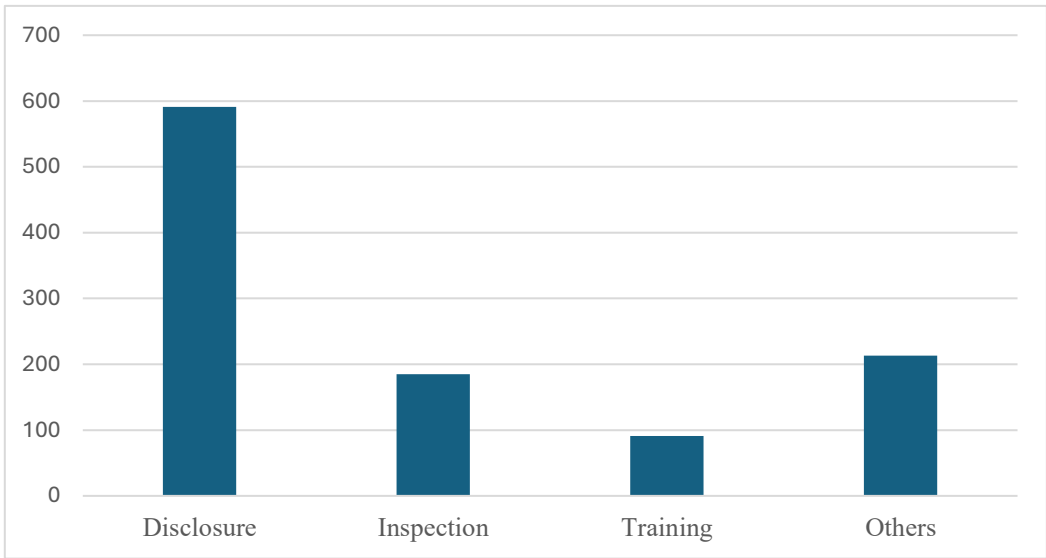
Example #3

(<https://www.sec.gov/Archives/edgar/data/878725/000102140803005260/dex1058.txt>)

HEALTH & SAFETY PRECAUTIONS.

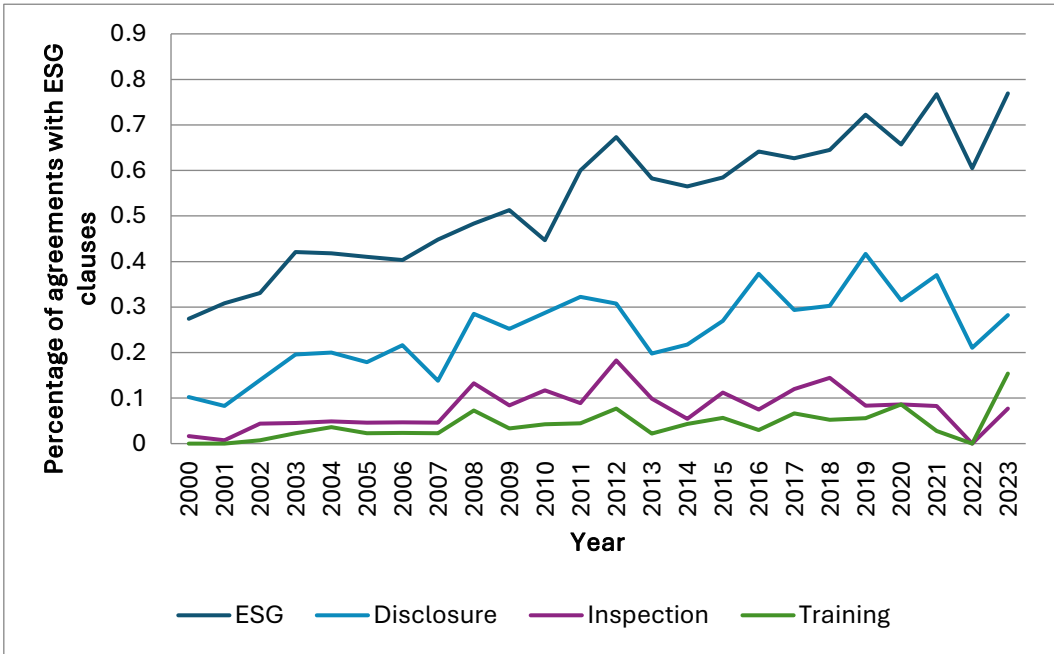
When hazardous substances, waste, or materials are known, assumed, or suspected to exist at a site, Contractor and its Subcontractor(s) are required to take appropriate precautions to protect the health and safety of personnel, to comply with applicable laws and regulations, and to follow procedures that are deemed prudent to minimize physical and health risks to employees, the public, and the environment. Owner hereby warrants that if it knows or has any reason to assume or suspect that hazardous, toxic or radiologic substances, waste, or materials may exist at the Site or adjacent thereto it has so informed Contractor.

Figure 1. Frequency of E&S Clauses



This figure illustrates the frequency of E&S clauses in the sample.

Figure 2. E&S Clauses by Year



This figure illustrates the percentage of E&S clauses over the sample period of 2000-2023.

Table 1. Sample Selection

	# Contracts
Supply contracts filed between 2000 to 2023	7,222
— drop agreement amendments and contracts with missing contracting parties or non-company contracting parties	(2,749)
— drop contracts duplicates	(1,148)
— drop observations with missing data on control variables	<u>(714)</u>
Final sample	2,611

Table 2. Country Distribution

Panel A: Top Ten Customers by Country

Customer Country	Freq.	Percent
United States	2,240	85.79%
United Kingdom	42	1.61%
Canada	37	1.42%
Switzerland	31	1.19%
Japan	29	1.11%
Germany	28	1.07%
Ireland	27	1.03%
Australia	13	0.50%
India	13	0.50%
China	12	0.46%
All Other Countries	139	5.34%
<i>Total</i>	<i>2,611</i>	<i>100.00%</i>

Panel B: Top Ten Suppliers by Country

Supplier Country	Freq.	Percent
United States	1,790	68.56%
Switzerland	89	3.41%
Germany	84	3.22%
United Kingdom	82	3.14%
Canada	73	2.80%
Japan	73	2.80%
France	41	1.57%
China	38	1.46%
Italy	32	1.23%
Netherlands	26	1.00%
All Other Countries	281	10.83%
	2,611	100.00%

Panel A of this table reports the sample distribution of top ten customers' countries. Panel B of this table reports the sample distribution of top ten suppliers' countries.

Table 3. Industry Distribution of Suppliers

Supplier Industry	Obs	E&S	Disclosure	Inspection	Training	Other
Consumer NonDurables	83	32	12	4	1	4
Consumer Durables	36	16	7	2	2	3
Manufacturing	177	79	33	14	9	21
Oil, Gas, and Coal Extraction and Products	100	70	35	7	2	8
Chemicals and Allied Products	210	110	53	6	2	19
Business Equipment	334	150	56	38	28	35
Telephone and Television Transmission	7	3	1	0	0	3
Utilities	77	34	9	7	3	13
Wholesale, Retail, and Some Services	120	44	20	2	1	5
Healthcare, Medical Equipment, and Drug	935	484	255	62	16	56
Finance	118	72	14	6	2	5
Other	414	189	96	37	25	41

This table reports the distribution of E&S clauses by Fama–French 12 industry classification of supplier.

Table 4. Summary Statistics

Variable	N	Mean	SD	p25	p50	p75
E&S	2611	0.491	0.5	0	0	1
Disclosure	2611	0.226	0.419	0	0	0
Inspection	2611	0.071	0.257	0	0	0
Training	2611	0.036	0.185	0	0	0
Others	2611	0.084	0.277	0	0	0
Intensity	2611	0.908	1.16	0	0	2
Customer_Ad	2611	0.009	0.082	0	0	0
Customer_Size	2611	5.43	4.49	0	5.9	9.47
Relationship Specific Investment	2611	0.223	0.416	0	0	0
Foreign Supplier	2611	0.361	0.48	0	0	1
Same Industry	2611	0.589	0.49	0	1	1
Customer_ROA	2611	-0.054	0.307	0	0.01	0.069
Customer_Leverage	2611	0.516	0.762	0.093	0.445	0.662
Disclosure_Mandate	2611	0.092	0.289	0	0	0
Customer_Public	2611	0.661	0.473	0	1	1
Customer_US	2611	0.858	0.349	1	1	1
Customer_Coverage	1726	1.52	1.39	0	1.61	2.83
Customer_IndexOwn	1726	0.215	0.243	0	0.079	0.429

This table focuses on the summary statistics for the main sample.

Table 5. Baseline Results

VARIABLES	(1) E&S	(2) E&S	(3) Disclosure	(4) Inspection	(5) Training	(6) Others	(7) E&S	(8) E&S
Customer_Ad	0.137*** (0.051)	0.157** (0.073)	0.171*** (0.034)	0.196*** (0.027)	0.215*** (0.033)	0.011 (0.036)		0.158** (0.071)
Customer_Size	0.011*** (0.003)	0.008** (0.003)	0.004 (0.003)	0.002 (0.001)	0.002 (0.001)	0.006*** (0.002)		0.008** (0.003)
Relationship Specific Investment	0.048** (0.023)	0.043* (0.023)	0.051** (0.021)	0.038*** (0.014)	0.010 (0.009)	0.003 (0.013)		0.042* (0.023)
Foreign Supplier	-0.013 (0.022)	-0.009 (0.022)	-0.041** (0.019)	-0.001 (0.012)	-0.001 (0.008)	-0.002 (0.012)		-0.010 (0.022)
Same Industry	0.038** (0.019)	0.021 (0.022)	0.005 (0.019)	0.000 (0.012)	0.001 (0.008)	-0.017 (0.011)		0.021 (0.022)
Customer_ROA	0.043 (0.044)	0.053 (0.044)	0.062** (0.030)	0.023 (0.017)	0.010 (0.009)	0.013 (0.022)		0.051 (0.044)
Customer_Leverage	-0.019 (0.015)	-0.014 (0.015)	-0.004 (0.012)	-0.000 (0.007)	-0.003 (0.003)	0.003 (0.006)		-0.013 (0.015)
Customer_Public	0.058** (0.026)	0.082*** (0.026)	0.024 (0.022)	0.023* (0.012)	0.002 (0.010)	0.010 (0.013)		0.083*** (0.026)
Customer_US	0.034 (0.029)	0.028 (0.029)	-0.012 (0.026)	0.006 (0.016)	0.002 (0.011)	-0.011 (0.018)		0.067** (0.032)
Disclosure_Mandate							0.089*** (0.033)	0.106*** (0.036)
Constant	0.356*** (0.034)	0.363*** (0.036)	0.206*** (0.031)	0.030 (0.019)	0.021* (0.012)	0.059*** (0.020)	0.483*** (0.010)	0.322*** (0.038)
Observations	2,611	2,611	2,611	2,611	2,611	2,611	2,611	2,611
R-squared	0.103	0.165	0.101	0.087	0.106	0.101	0.146	0.167
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Customer Industry FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the results examining the factors that influence the inclusion of E&S clauses in supply contracts. The dependent variables are indicators for the presence of general E&S clauses and subcategorical clauses by type including Disclosure, Inspection, Training, and Others. All variables are defined in Appendix A. Robust standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 6. E&S clauses in Supply Contracts with Publicly Listed Customers

VARIABLES	(1) E&S	(2) E&S	(3) Disclosure	(4) Inspection	(5) Training	(6) Others
Customer_Ad	0.111*** (0.041)	0.096** (0.039)	0.146*** (0.044)	0.187*** (0.031)	0.215*** (0.032)	0.014 (0.037)
Customer_Size	0.004 (0.004)	0.002 (0.004)	0.003 (0.004)	0.003 (0.002)	0.003** (0.001)	0.007*** (0.002)
Customer_Coverage	0.083*** (0.013)	0.075*** (0.014)	0.034*** (0.012)	0.024*** (0.007)	0.013** (0.005)	0.018** (0.008)
Customer_IndexOwn	-0.231*** (0.075)	-0.178** (0.078)	-0.149** (0.071)	-0.018 (0.043)	-0.046 (0.028)	-0.048 (0.047)
Relationship Specific Investment	-0.002 (0.027)	-0.004 (0.028)	0.031 (0.027)	0.029 (0.018)	0.012 (0.011)	0.007 (0.017)
Foreign Supplier	-0.039 (0.026)	-0.035 (0.027)	-0.059** (0.025)	0.009 (0.016)	-0.001 (0.010)	0.002 (0.015)
Same Industry	0.029 (0.024)	0.013 (0.026)	-0.000 (0.023)	-0.002 (0.015)	-0.005 (0.010)	-0.027* (0.014)
Customer_ROA	0.037 (0.056)	0.042 (0.054)	0.064 (0.046)	-0.002 (0.027)	0.003 (0.015)	-0.001 (0.036)
Customer_Leverage	-0.014 (0.020)	-0.006 (0.020)	-0.002 (0.016)	-0.004 (0.008)	-0.000 (0.005)	0.011 (0.010)
Customer_US	-0.018 (0.037)	-0.019 (0.037)	-0.005 (0.034)	0.008 (0.023)	0.005 (0.015)	-0.017 (0.024)
Constant	0.460*** (0.052)	0.474*** (0.053)	0.224*** (0.047)	0.012 (0.031)	0.001 (0.022)	0.047 (0.031)
Observations	1,726	1,726	1,726	1,726	1,726	1,726
R-squared	0.127	0.183	0.108	0.105	0.136	0.103
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Customer_Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the results examining the factors that influence the inclusion of E&S clauses in supply contracts in a subsample where customers are publicly listed firms. The dependent variables are indicators for the presence of general E&S clauses and subcategorical clauses by type including Disclosure, Inspection, Training, and Others. All variables are defined in Appendix A. Robust standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 7. Supplier Characteristics and E&S Clauses

VARIABLES	(1) E&S	(2) E&S	(3) Disclosure	(4) Inspection	(5) Training	(6) Others
Customer_Ad	0.141*** (0.049)	0.164** (0.073)	0.176*** (0.032)	0.201*** (0.026)	0.218*** (0.030)	0.006 (0.036)
Supplier_Ad	0.068 (0.064)	0.104*** (0.038)	-0.013 (0.019)	-0.014 (0.010)	0.005 (0.006)	-0.016 (0.013)
Customer_Size	0.010*** (0.003)	0.008** (0.003)	0.002 (0.003)	0.003* (0.002)	0.002* (0.001)	0.006*** (0.002)
Supplier_Size	0.003 (0.004)	0.001 (0.004)	0.000 (0.003)	-0.004** (0.002)	-0.002** (0.001)	-0.005*** (0.002)
Relationship Specific Investment	0.045* (0.024)	0.036 (0.024)	0.050** (0.022)	0.040*** (0.014)	0.013 (0.009)	0.005 (0.014)
Foreign Supplier	0.015 (0.038)	0.012 (0.039)	-0.023 (0.034)	0.014 (0.020)	0.009 (0.015)	0.006 (0.023)
Same Industry	0.037* (0.020)	0.016 (0.023)	0.006 (0.020)	0.000 (0.013)	0.002 (0.009)	-0.027** (0.013)
Custome_ROA	0.057 (0.046)	0.078* (0.046)	0.077** (0.035)	0.016 (0.019)	0.005 (0.010)	0.013 (0.026)
Supplier_ROA	0.275*** (0.083)	0.226*** (0.084)	0.032 (0.074)	0.041 (0.041)	0.029 (0.029)	0.052 (0.042)
Customer_Leverage	-0.017 (0.016)	-0.009 (0.017)	-0.004 (0.013)	0.001 (0.008)	-0.004 (0.003)	0.004 (0.007)
Supplier_Leverage	0.086** (0.036)	0.069* (0.036)	-0.038 (0.032)	0.006 (0.021)	-0.026** (0.012)	0.001 (0.021)
Customer_Public	0.052* (0.027)	0.076*** (0.028)	0.024 (0.023)	0.018 (0.013)	-0.002 (0.010)	0.004 (0.014)
Supplier_Public	-0.098*** (0.029)	-0.066** (0.029)	0.012 (0.025)	0.024* (0.014)	0.018** (0.009)	0.036** (0.017)
Customer_US	0.041 (0.033)	0.034 (0.034)	0.009 (0.029)	0.011 (0.016)	0.005 (0.012)	-0.007 (0.021)
Supplier_US	0.043 (0.036)	0.040 (0.037)	0.028 (0.032)	0.019 (0.019)	0.016 (0.014)	0.008 (0.022)
Constant	0.337*** (0.058)	0.346*** (0.061)	0.180*** (0.051)	0.013 (0.028)	0.014 (0.021)	0.064* (0.035)
Observations	2,376	2,376	2,376	2,376	2,376	2,376
R-squared	0.115	0.170	0.101	0.093	0.112	0.104
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Customer Industry FE	No	Yes	Yes	Yes	Yes	Yes

This table reports the results examining how suppliers' characteristics related to the inclusion of E&S clauses in supply contracts. The dependent variables are indicators for the presence of general E&S clauses and subcategorical clauses by type including Disclosure, Inspection, Training, and Others. All variables are defined in Appendix A. Robust standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 8. California Supply Chain Transparency Act and E&S Clauses

VARIABLES	(1) E&S	(2) E&S	(3) Disclosure	(4) Disclosure	(5) Inspection	(6) Inspection	(7) Training	(8) Training	(9) Others	(10) Others
California Act	0.046 (0.030)	0.017 (0.030)	0.049** (0.024)	0.030 (0.024)	0.022 (0.015)	0.015 (0.015)	-0.008 (0.008)	-0.012 (0.009)	-0.011 (0.014)	-0.023 (0.015)
California Act×Post	0.087* (0.049)	0.063 (0.049)	0.009 (0.048)	0.000 (0.048)	0.095*** (0.035)	0.091*** (0.035)	0.052** (0.025)	0.050** (0.025)	0.125*** (0.037)	0.118*** (0.037)
Customer_Ad		0.157** (0.072)		0.171*** (0.034)		0.198*** (0.029)		0.214*** (0.033)		0.013 (0.037)
Customer_Size		0.007** (0.003)		0.003 (0.003)		0.001 (0.002)		0.001 (0.001)		0.005*** (0.002)
Relationship Specific Investment		0.041* (0.023)		0.050** (0.021)		0.036*** (0.014)		0.011 (0.009)		0.005 (0.013)
Foreign Supplier		-0.008 (0.022)		-0.043** (0.019)		-0.001 (0.012)		-0.003 (0.008)		-0.003 (0.012)
Same Industry		0.019 (0.022)		0.004 (0.019)		-0.004 (0.012)		-0.001 (0.008)		-0.021* (0.012)
Customer_ROA		0.050 (0.044)		0.059* (0.030)		0.019 (0.017)		0.010 (0.009)		0.015 (0.022)
Customer_Leverage		-0.013 (0.015)		-0.004 (0.012)		-0.000 (0.007)		-0.003 (0.003)		0.004 (0.006)
Customer_Public		0.083*** (0.026)		0.026 (0.022)		0.022* (0.013)		0.000 (0.010)		0.010 (0.013)
Customer_US		0.028 (0.029)		-0.019 (0.026)		0.001 (0.016)		-0.005 (0.012)		-0.016 (0.018)
Constant	0.476*** (0.011)	0.360*** (0.036)	0.215*** (0.009)	0.209*** (0.031)	0.060*** (0.005)	0.034* (0.019)	0.034*** (0.004)	0.032** (0.013)	0.078*** (0.006)	0.071*** (0.021)
Observations	2,611	2,611	2,611	2,611	2,611	2,611	2,611	2,611	2,611	2,611
R-squared	0.147	0.166	0.091	0.102	0.084	0.095	0.095	0.106	0.098	0.106
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Customer_Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the results on how California Supply Chain Transparency Act might influence the incorporation of E&S clauses in supply contracts. The dependent variables

are indicators for the presence of general E&S clauses and subcategorical clauses by type including Disclosure, Inspection, Training, and Others. All variables are defined in Appendix A. Robust standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 9. E&S clauses and Future Supplier E&S Incidents

VARIABLES	(1) E&S Inc	(2) E&S Inc	(3) E&S Inc	(4) E&S Inc	(5) E&S Inc
E&S	0.002 (0.027)				
Disclosure		0.021 (0.027)			
Inspection			-0.066*** (0.022)		
Training				-0.068** (0.031)	
Others					-0.035 (0.038)
Supplier_Size	0.014** (0.006)	0.014** (0.006)	0.014** (0.006)	0.014** (0.006)	0.014** (0.006)
Supplier_Ad	-0.003 (0.024)	-0.004 (0.024)	-0.003 (0.024)	-0.002 (0.024)	-0.004 (0.023)
Supplier_ROA	0.007 (0.017)	0.004 (0.016)	0.008 (0.017)	0.008 (0.017)	0.008 (0.017)
Supplier_Leverage	0.002 (0.006)	0.001 (0.006)	0.001 (0.006)	0.002 (0.006)	0.002 (0.006)
Supplier_Public	-0.025 (0.023)	-0.026 (0.023)	-0.026 (0.023)	-0.025 (0.023)	-0.026 (0.023)
Constant	0.175*** (0.026)	0.172*** (0.024)	0.181*** (0.023)	0.178*** (0.023)	0.179*** (0.023)
Observations	2,682	2,682	2,682	2,682	2,682
R-squared	0.813	0.813	0.813	0.813	0.813
Year FE	Yes	Yes	Yes	Yes	Yes
Supplier FE	Yes	Yes	Yes	Yes	Yes

This table presents the results examining the relationship between the inclusion of E&S clauses in supply contracts and subsequent environmental and social incidents of suppliers. The dependent variable is the inverse hyperbolic sine transformation of the total number of environmental and social incidents. All variables are defined in Appendix A. Robust standard errors are clustered at the supplier level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 10. Cross-Sectional Variation in E&S clauses and Future Supplier E&S Incidents

VARIABLES	(1) E&S Inc	(2) E&S Inc	(3) E&S Inc	(4) E&S Inc	(5) E&S Inc	(6) E&S Inc	(7) E&S Inc
Prior_Incidents	0.122 (0.114)	0.097 (0.109)	0.152 (0.100)	0.146 (0.099)	0.150 (0.105)	0.104 (0.113)	0.153 (0.100)
E&S	-0.009 (0.020)						
E&S×Prior_Incidents	0.036 (0.116)						
Disclosure		-0.006 (0.017)				0.005 (0.018)	0.048* (0.027)
Disclosure×Prior_Incidents		0.214 (0.155)				0.320* (0.172)	
Inspection			-0.036** (0.017)			-0.042*** (0.014)	-0.058** (0.026)
Inspection×Prior_Incidents			-0.287*** (0.107)			-0.262 (0.197)	-0.292*** (0.103)
Training				-0.021 (0.018)		0.023 (0.020)	0.018 (0.026)
Training×Prior_Incidents				-0.261** (0.113)		-0.211 (0.223)	
Others					-0.017 (0.017)	-0.009 (0.013)	-0.025 (0.044)
Others×Prior_Incidents					-0.110 (0.172)	-0.083 (0.202)	
Observations	2,682	2,682	2,682	2,682	2,682	2,682	2,682
R-squared	0.814	0.815	0.815	0.815	0.815	0.816	0.815
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Supplier FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents how the relationship between the inclusion of E&S clauses in supply contracts and subsequent environmental and social incidents of suppliers varies with whether a corporate customer has experienced E&S incidents in the past five years. The dependent variable is the inverse hyperbolic sine transformation of the total number of environmental and social incidents. All variables are defined in Appendix A. Robust standard errors are clustered at the supplier level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.