# The Economic and Financial Impact of Negative Environmental and Social Practices: Evidence from Consumers' Store Visits

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## Abstract

We study the economic and financial impact of firm-level negative environmental and social (E&S) incidents. Using Safegraph's daily foot-traffic data at the store level, we first find a significant decrease in a firm's store visits following such incidents. The decrease in visits by more E&S-conscious consumers is nearly four times greater than that by less E&S-conscious consumers. Our results are more pronounced when (1) negative E&S events are severe and news of such events is widespread; (2) populations feature more educated and younger consumers; (3) firms have high E&S ratings and large advertising expenditures; and (4) local product markets are more competitive. Lastly, we find that following E&S incidents, firm sales drop twice as much in zip codes that are more E&S-conscious compared to those that are less E&S-conscious. Our findings suggest that firms' E&S practices can affect firm value via consumers shopping behavior and cash flows.

**Keywords:** Environmental and Social Practices, Store Visits, Firm Value

**JEL Classification: D12, G30, M14**

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## 1. Introduction

Environmental and social (E&S) issues are attracting increasing attention from academics and practitioners. One of the widely debated questions in the E&S literature is how firms' E&S investments and practices affect firm value (Gillan, Koch, and Starks (2021)). Theory suggests that E&S activities can create value by increasing shareholder wealth via either lower discount rates or higher cash flows (e.g., Gillan et al. (2021)). While extensive research studies the discount rate channel, i.e., the relation between E&S activities and the cost of capital (e.g., Heinkel, Kraus, and Zechner (2001); Edmans (2011); Bolton and Kacperczyk (2021); Pastor, Stambaugh, and Taylor (2021); Pedersen, Fitzgibbons, and Pomorski (2021); Berk and van Binsbergen (2022)), there is limited empirical evidence on the cash flow channel, i.e., the impact of E&S activities on firms' future cash flows. This paper aims to fill that void by shedding light on the cash flow channel and empirically examining whether negative information concerning firms' E&S practices affects consumer behavior and subsequently firm value through this channel. Specifically, we study how firm-level negative E&S incidents affect consumers' store visits.

Both anecdotal and academic evidence show that consumers consider a firm's E&S reputation in their consumption decisions. According to a survey by the Morgan Stanley Institute for Sustainable Investing (2019)[1], nearly 33% of surveyed individuals agree with the statement that they would "purchase from a brand particularly because of the company's environmental or social impact." Additionally, empirical and theoretical research on asset allocation shows that investors with E&S preferences are more willing to invest in "green" assets and will pay a premium to do so (e.g., Hong and Kostovetsky (2012); Riedl and Smeets (2017); Hartzmark and Sussman (2019); Bauer, Ruof and Smeets (2021); Pastor et al. (2021)).

[1] See "Sustainable Signals: Individual Investor Interest Driven by Impact, Conviction and Choice", Morgan Stanley, 2019.

Despite the above evidence suggesting that consumer behavior can be shaped by firms' E&S practice, research linking firms' E&S practices and consumer behavior is scarce, primarily because of the lack of granular data on individual purchases of a given firm's products and services. The firm-level sales and cash flow data reported in financial reports are not ideal measures of consumption, because they are low frequency data and contain sales to parties other than individual consumers. This lack of granularity makes it difficult to pin down consumer behavior in response to E&S practices over a short window of time. We overcome this challenge by exploiting a novel dataset on consumer foot traffic to firms' stores, compiled by Safegraph, a U.S. data vendor. Since 2018, Safegraph has tracked approximately 10% of all smartphones in the U.S. and has covered every retail store for the 6,000 largest U.S. brands. We use store-level foot traffic as a proxy for consumer behavior, following existing research showing a positive correlation between foot traffic and sales (e.g., Bizjak, Kalpathy, Mihov, and Ren (2022); Gurun, Nickerson, and Solomon (2022); Hacamo (2022); Noh, So, and Zhu (2022)).[2] Specifically, we calculate the weekly average number of visitors from a given zip code to a specific firm's store.

To causally estimate the impact of negative E&S incidents on consumers' shopping behavior, we exploit firm-level negative E&S incidents from RepRisk data and design a difference-in-differences test. These negative E&S incidents reflect firms' violations of environmental and social standards that may have generated negative reputational, compliance, and financial consequences (e.g., Akey, Lewellen, Liskovich, and Schiller (2021); Derrien, Krueger, Landier, and Yao (2022); Gantchev, Giannetti, and Li (2022)). [3] Using the RepRisk data,

[2] In Internet Appendix Table B.1, we also show a positive relation between foot traffic to a firm's stores and its annual sales, change in annual sales, and operating income, suggesting that foot traffic is a good proxy for firms' sales and cash flows.

[3] Existing studies document a negative relation between firms' negative E&S incidents from RepRisk and subsequent E&S ratings provided by different rating agencies. We use RepRisk rather than ESG scores for four reasons. First, the negative incidents in RepRisk clearly identify what E&S information is delivered to consumers and when such deliveries occur, while the ESG ratings are compiled in a non-transparent way and use multiple sources of information

we construct an event-based sample. Specifically, for each negative E&S incident, we construct an incident window, including the incident week, the four weeks before as the pre-E&S incident period, and the four weeks after as the post-E&S incident period. Each week, a firm has both more and less E&S-conscious consumers visiting its stores from different zip codes. We use the more E&S-conscious consumers as the treated group, and the less E&S-conscious consumers as the control group. Relying on prior literature showing a positive correlation between Democratic-leaning and E&S preferences (e.g., Hong and Kostovetsky (2012); Di Giuli and Kostovetsky (2014); Kaviani, Li, and Maleki (2021); Bernstein, Billings, Gustafson, and Lewis (2022)), we classify Democratic-leaning consumers as more E&S-conscious and others as less E&S-conscious.[4]

Our final sample is at the firm by incident by week by zip code level, spanning the period Jan 2018 – Jan 2022. This sample contains 6,475,300 observations, which cover 151 firms, 548 firm-incident windows, and 10,031 zip codes. For the regression analyses, we include various fixed effects, such as incident by year-week, county by year-month, and zip code fixed effects, to control

unavailable to consumers. Second, many firms take multiple green-washing actions to improve their ESG ratings, generating much noise in the ratings (Marquis, Toffel, and Zhou (2016)). Third, large inconsistencies exist across different ESG ratings, providing consumers with confusing information on firms' ESG efforts (Berg, Koelbel and Rigobon (2022)). Fourth, ESG ratings are updated at a low frequency and for unknown reasons, which makes it difficult to conduct event-based studies.

[4] We classify consumers in a given zip code as Democratic-leaning if more than 70% of political contributions by consumers in the zip code were donated to the Democratic Party over the pre-sample 2010 – 2017 period. Our results are robust to using a threshold of 50%, 60%, or 80% to classify Democratic-leaning consumers, or using individual votes for presidential elections as an alternative measure of Democratic-leaning consumers. We believe that political affiliation is a good measure of E&S preferences for the following reasons. The Democratic party usually supports and emphasizes E&S issues, such as environmental protection, labor rights, and anti-discrimination. According to a 2007 National Consumers League survey, 96% of Democrats believe that Congress should ensure that firms address social issues, compared to 65% of Republicans. In the 2016 Pew Research Center survey, 78% of Democratic-leaning participants believe climate change should be a top priority, nearly three times more than Republican-leaning participants (21%). Additionally, various studies use Democratic leaning as a measure of E&S preferences (e.g., Di Giuli and Kostovetsky (2014); Kaviani et al. (2021)). In Internet Appendix Table C.7, we show consistent results using individual belief in climate change as another proxy for E&S preferences.

for heterogeneities across firms, incidents, and locations. Our empirical strategy allows within-incident analyses, which isolates the supply-side effects and identifies demand-driven purchase.

We begin our empirical analyses by examining the impact of negative E&S incidents on consumer foot traffic to firms' stores. The results show that these incidents lead to an average 0.15% drop in weekly store visitors. Importantly, the reduction in store visitors is mostly concentrated among E&S-conscious consumers. The average number of store visits drops by 0.44% weekly for more E&S-conscious consumers, nearly four times larger than that of 0.09% for less E&S-conscious consumers.[5] This finding shows that a firm loses about 1,189 more E&S-conscious consumers and 238 less E&S-conscious consumers in the four weeks following a negative incident.[6]

Using dynamic tests, we further examine the differences in store visits between more and less E&S-conscious consumers around E&S incidents. We find that there is no significant difference in store visits between these two types of consumers prior to the negative incidents. Starting in the week in which news of negative E&S incidents first appears, we observe a significant decrease in foot traffic among more E&S-conscious consumers relative to less E&S-conscious consumers. The evidence is consistent with the parallel-trends assumption behind our difference-in-differences identification.

In our main analysis above, we include incidents related to both environmental and social issues. To examine whether these two types of incidents affect store visits differently, we re-run

[5] The economic magnitude is relatively small because most E&S incidents from RepRisk are not very serious violations. The relative magnitude between more and less E&S-conscious consumers matters more in our setting. In addition, prior works using the RepRisk for other studies also document the relatively small economic effects of the incidents. For example, Gantchev et al. (2022) find that an average number of E&S incidents (4.85) is associated with a drop in ownership by E&S-conscious investors of 0.17 percentage points. The five-day CAPM-adjusted CARs are -0.096%. Derrien et al. (2022) find that analysts revise their earnings forecasts for the one-quarter horizon down by -0.158% after firms' E&S incidents.

[6] To put this in perspective, the weekly total of store visitors is 67,468 for the average firm.

our analysis using subsamples containing environment and social incidents separately. Our main findings remain similar, suggesting that both environmental and social incidents drive the results.

We conduct several cross-sectional tests to better understand the underlying mechanisms driving our findings. First, we examine if our main results vary with the severity (the degree of impact an incident has on the environment and/or the social order) and influence (the reach of publicity regarding an incident, and its resulting impact on public opinion) of negative E&S incidents. Using RepRisk's indices measuring the severity and influence of these incidents, we find that more E&S-conscious consumers make fewer visits to stores whose parent firms have had more severe and influential negative incidents, compared to their less E&S-conscious counterparts.

Second, using zip code-level demographic information, we find that our main results are stronger in areas with a higher percentage of well-educated and younger residents, consistent with the notion that younger and well-educated people care more about E&S issues.

Next, we find that the larger decrease in store visits among E&S-conscious consumers concentrates in firms with higher advertising expenditures. This finding is likely because higher advertising expenses increase customer awareness, which subsequently enhances consumer perception of negative E&S incidents (Servaes and Tamayo (2013)). We also find that our main results are more pronounced among firms with higher E&S ratings. Perhaps consumers perceive a violation of E&S standards by firms with higher E&S ratings to be more surprising and therefore more disappointing, since such firms are perceived as more environmentally and socially responsible ex ante. The resulting disruption of consumer trust then triggers a larger decrease in store visits.

Lastly, we examine how the intensity of local market competition shapes consumer responses to E&S incidents. Our results show that the store visit gap between more and less E&S-

conscious consumers is much larger in a locally competitive market. This evidence is consistent with our conjecture that diverse product alternatives allow consumers to switch their allegiances to newly favored companies once their trust in a given firm's E&S policies has been violated.

As an additional analysis to assess the impact of negative E&S incidents on firm value, we directly test whether such incidents are associated with reduced firm sales. Using annual sales data obtained from Your Economy (YE) Time Series, we find that, on average, one additional E&S incident is associated with a 0.05% drop in firm sales. Considering that the average firm in our sample has annual sales of $24 billion, one additional E&S incident is associated with a loss of $12 million in sales on average. A further decomposition indicates that the loss is about $19.2 million in more E&S-conscious areas and about $9.6 million in less E&S-conscious areas. Our findings are consistent with prior research documenting lower analyst earnings forecasts (Derrien et al. (2022)) and lower returns on assets (Glossner (2021)) following negative E&S incidents.

Our paper makes several contributions. First, our paper adds to the literature on environmental, social and governance (ESG) performance and firm value. While there is mixed evidence on whether ESG activities are value-enhancing (e.g., Di Giuli and Kostovetsky (2014); Eccles, Ioannou, and Serafeim (2014); Krueger (2015); Masulis and Reza (2015); Ferrel, Liang, and Renneboog (2016); Lins, Servaes, and Tamayo (2017)), an emerging literature studies possible channels through which ESG activities can add value. These studies focus primarily on the discount rate channel (e.g., Chava (2014); Albuquerque, Koskinen, and Zhang (2019); Bolton and Kacperczyk (2021); Pastor et al. (2021); Pedersen et al. (2021); Berk and van Binsbergen (2022)), and largely neglect the cash flow channel, with a few exceptions. For example, Pastor et al. (2021) model the cash flow channel and suggest that customers could shift their demands for goods and services to greener providers in response to E&S-related concerns, while Glossner (2021)

empirically shows that negative ESG incidents are negatively correlated with future profitability and risk-adjusted stock returns. Additionally, Derrien et al. (2022) find that analysts revise forecasts downward following negative ESG news. We extend the discussion on the cash flow channel by providing more direct and granular evidence that negative E&S incidents can be harmful to firms by reducing foot traffic and sales.

Our paper also contributes to the literature exploring how individuals' E&S preferences affect their consumption choices. Existing studies primarily examine investors' E&S preferences in asset allocations, showing that investors with E&S preferences are more willing to invest in "green" assets and will pay a premium to do so (e.g., Hong and Kostovetsky (2012); Riedl and Smeets (2017); Hartzmark and Sussman (2019); Bauer et al. (2021)). Conversely, other studies document a limited impact of E&S preferences on investment decisions (Anderson and Robinson (2022); Heeb, Kolbel, Paetzold, and Zeisberger (2022)). Recent studies also explore the implications of consumer E&S concerns on which banks consumers trust and which careers they pursue, which in turn affect the labor market as a whole (e.g., Krueger, Metzger, and Wu (2021); Cen, Qiu, and Wang (2022); Homanen (2022)). For example, Krueger et al. (2021) show that individuals who value environmental sustainability are more likely to accept lower wages to work in firms and sectors that reflect those values. Our study is among the first to show that consumers with strong E&S preferences penalize firms' negative behavior by reducing their consumption of those firm's products and services. Our paper contributes to the literature by identifying consumer consumption as an important channel in which individual E&S preferences shape purchase decisions and ultimately impact corporate profits and firm value.

The remainder of the paper is organized as follows. In section 2, we describe the data and summary statistics. In section 3, we present our research methods and main results. We conduct a

battery of cross-sectional tests in section 4. We examine firms' sales changes after E&S incidents in section 5 and conclude in section 6.

## 2. Data and Summary Statistics

### 2.1 Sample Construction and Measures

#### 2.1.1 Data on Foot Traffic to Firms' Stores from SafeGraph

We obtain data on customer foot traffic from SafeGraph, a U.S. data vendor that since 2018 has tracked the GPS movements of 45 million anonymized mobile devices, which comprise approximately 10% of all smartphones in the U.S. The resulting tracked consumer movements can be linked to nearly 3.6 million retail stores, encompassing every single establishment for the 6,000 largest U.S. brands; the sheer amount of data available is massive. The foot-traffic data are organized at the store level and provide detailed information on each store's brand; the store's address; the number of daily visits from a census block group (CBG), including the dates of those visits; and visitors' home addresses, including their respective zip codes.[7]

To enhance estimation efficiency, we first aggregate the data at the brand level by consumers' zip codes on a weekly basis. We then merge the data with public firms in Compustat using a brand-Ticker crosswalk provided by SafeGraph, since a publicly traded firm can have multiple brands. Next, we aggregate the data at the firm by zip code by week level. We exclude

[7] SafeGraph collects data from numerous smartphone applications, including those related to weather, games, dating, productivity, messaging, or news, from both Apple and Android smartphones. The visits data is based on pings, each of which identifies the latitude and longitude of a smartphone at a given moment in time. The location information is sufficiently detailed that SafeGraph can observe a device's location within a radius of a few meters. SafeGraph uses an algorithm that considers several features to determine whether an individual visits a firm's store, including the store's location, the proximity of the pings to the store's location, the number of pings, and the duration between pings. The GPS locations of stores are identified if they are within the geographical polygons denoting a structure or property's exact physical boundaries. Visits by employees are removed based on an algorithm. In addition, SafeGraph also reports the home address for each mobile device by analyzing its data during night-time hours (between 6 p.m. and 7 a.m.) in the past 6 weeks. If a consumer moves to a new area, SafeGraph can pick up the change in home location 6 weeks after the move. To protect the privacy of individual visitors, SafeGraph excludes CBGs with only 1 consumer visiting a specific store during a week, and reports 4 if there are 2 to 4 visitors from a CBG to a store.

firms in industries where consumer visits are likely not discretionary, including agriculture, finance, pharmaceuticals, and utilities. We also exclude zip codes in which a store has had fewer than five visitors during a given week.[8]

To measure consumers' purchases of a given firm's products or services, we construct a variable, *Visitors per Store*, to measure the average number of visitors who visit a firm's stores from a given zip code in a week. Scaling the number of visitors by the number of stores controls for heterogeneous supplies of stores across areas.

Prior research finds a positive relation between consumer foot traffic and sales revenue (e.g., Bizjak et al. (2022); Gurun et al. (2022); Hacamo (2022); Noh et al. (2022)). To further validate store-level foot traffic as a proxy for firms' sales and cash flows, we show a positive correlation between foot traffic and annual sales, change in annual sales, and operating income in Internet Appendix B.

### 2.1.2. Firms' Negative E&S Incidents from RepRisk

We obtain firm-level negative E&S incidents from RepRisk, a world-leading data vendor specializing in firms' ESG-related risks. These incidents reflect firms' violations of international standards that may have generated negative reputational, compliance, and financial consequences. RepRisk has collected data on these incidents on a daily basis from over 100,000 public sources and stakeholders in 23 languages since 2007. Its sources comprise various forms of print and online media, both corporate and independent, at global, national, and local levels; social media, including Twitter and blogs; government bodies, including regulators; think tanks; newsletters

[8] Our results (untabulated) remain robust without this filter.

from both industry watchdogs and corporate spokespeople; and the like.[9]

RepRisk collects and classifies all data related to negative ESG incidents into three broad categories: environmental, social, and governance, which are further broken down into 28 issues. While an incident can be linked to multiple categories or issues, our study focuses only on incidents classified as environmental and/or social. Environmental incidents include issues related to a changing climate, pollution, biodiversity, and the overuse and waste of resources, among others. Social incidents include discrimination in employment, forced labor, occupational health and safety, negative impacts on communities, and the like. We list six examples of negative incidents in our sample in Internet Appendix A.

2.1.3. Individual Political Contributions from the Federal Election Commission

Extensive research documents that Democrats are more concerned than their Republican counterparts with E&S issues (e.g., Hong and Kostovetsky (2012); Di Giuli and Kostovetsky (2014); Kaviani et al. (2021); Bernstein et al. (2022)). Following the literature, we use individuals' political contributions at the zip code level as proxies for consumer E&S preferences.

We obtain data on individuals' political contributions from the Federal Election Commission (FEC), which governs the financing of federal elections. This data provides complete records of individuals' political contributions to Republican- and Democratic-affiliated Senate, House, and presidential candidates, and to party committees established by candidates and political parties to collect and manage campaign funds. The data, which has covered political campaigns in federal elections in the U.S. since 1975, reports detailed information on each individual's name,

[9] RepRisk's methodology is event-driven, rather than company-driven. In other words, RepRisk captures all companies exposed to ESG risks, regardless of the company's size, industry, or country of headquarters or operations, and whether the company is publicly listed.

address, occupation, and employer; the contribution date and amount; and the political party of the recipient entity.

We focus on direct contributions to the dominant political parties and exclude any contributions through intermediate organizations, following prior literature (e.g., Hong and Kostovetsky (2012)). Specifically, from the raw dataset of political contributions, we drop any donation records if (1) the entity type of the recipient is a "PAC" (a Political Action Committee) or an "ORG" (an organization, including labor unions, trade associations, and cooperatives); or if (2) the party affiliation of the recipient entity is neither "REP" (Republican) nor "DEM" (Democratic).

We aggregate the contribution data at the zip code level and for the pre-sample period 2010 – 2017. To ensure a sufficient population in a given zip code area engaging in political activities, we exclude zip codes with total contribution amounts lower than $50,000. We classify consumers in a zip code as Democratic-leaning if more than 70% of political contributions in the zip code are made to the Democratic Party over the pre-sample 2010 – 2017 period.[10]

2.1.4. Firms' E&S Ratings from the Refinitiv ESG

We collect firms' environmental and social ratings from the Refinitiv ESG database (formally known as Thomson Reuters' ASSET4 database). This database is widely used in prior studies (e.g., Dyck, Lins, Roth and Wagner (2019)). The environmental and social ratings are separate and continuous measures ranging from 0 to 100. Higher ratings indicate that a firm is

[10] Given that the average and the median population in a zip code are about 10,000 and 3,000, we believe our threshold of $50,000 is reasonable. Our results are robust if we exclude zip codes with total contributions lower than $1,000, $5,000, $10,000, or $100,000, or if we drop this requirement. Our results are also robust to using a threshold of 50%, 60%, or 80% to classify Democratic-leaning consumers. Our results also hold using individual votes for presidential elections in Internet Appendix Table C.6.

more environmentally or socially responsible. We measure each firm's E&S rating as the average of the environmental and social ratings.

#### 2.1.5. Firms' Store-level Employment and Sales from the Your Economy (YE) Time Series

We obtain data on store-level sales and employment at the annual frequency from the Your Economy (YE) Time Series, provided by the Business Dynamics Research Consortium (BDRC) at the University of Wisconsin. YE Time Series tracks all establishments at their unique locations and focuses on establishments that are "in-business" (i.e., conducting commercial activities). Businesses that are created for the purpose of housing financial, real estate, and tax reporting entities, or are suspected of never actually conducting commercial activities, are excluded. The sample period is from 1998 to 2021.

#### 2.1.6. Additional data

We gather a firm's accounting information and industry classification from Compustat. We also obtain demographic characteristics (e.g., education and age) at the zip code level from the 2018 American Community Survey 5-year estimate tables.

### 2.2 Sample Construction and Summary Statistics

Using the negative E&S incidents identified by RepRisk, we construct an event-based sample for our empirical analyses. To be consistent with the SafeGraph data, we aggregate all incidents by firm at the year-week level. For each firm, we classify a week as an incident week if at least one incident occurred during that week.[11] Then, for each incident week, we construct a

[11] The incident date is the date of news coverage, which is ideal for our study, given our focus on consumer response to such incidents once they have been revealed to the general public.

nine-week incident window: 4 weeks before the incident week, 4 weeks after the incident week, and the incident week itself. We require that there are no other incidents in the 4 weeks before and after the incident week. We also require non-missing observations at least for the incident week and the 2 weeks before and after the incident.[12]

Our final sample has 6,475,300 observations, including 151 firms with 548 incident windows during the period Jan 2018 to Jan 2022.[13] We report industry distribution of the 151 firms in Table 1 Panel A and Figure 1. The top three industries in our sample are wholesale and retail trade (SIC 50-59, 54%), manufacturing (SIC 20-39, 26%), and services industries (SIC 70-79, 13%). Figure 2 presents the distribution of store visitors across zip codes in the contiguous U.S. Store visitors are from 10,031 zip codes and 1,939 counties, covering about 24% of U.S. zip codes and 62% of U.S. counties, respectively. Consistent with the population distribution in the U.S., most of the visitors live on the eastern or western coasts.

Table 1 Panel B presents the distribution of incident issues in our sample. Our regression sample includes 599 unique incidents, covering 1,261 E&S issues. Among those, the top five issues are *poor employment conditions (16.10%); human rights abuses and corporate complicity (15.86%); impacts on landscapes, ecosystems, and biodiversity (13.24%); impacts on communities (11.42%);* and *occupational health and safety issues (7.14%).*

Table 2 reports the summary statistics. On average, a store has 4.54 unique visitors from a given zip code in a week, with the median of 4.222 and the 90*th* percentile of 6.296. 15.5% of the

[12] Some incident windows have fewer than 9 weeks due to missing data on foot traffic. In addition, we require that a firm have at least 4 visitors from a zip code in a given week to be included in our sample.

[13] A firm can have multiple incidents and the nine-week windows can overlap, which can lead to an underestimate of the true effects. Put differently, if we do observe that more E&S-conscious consumers behave differently from less E&S-conscious consumers, the real economic magnitudes should be larger than what we document. Our reasoning is that when two sequential incidents occur within a short period of time, consumer response to the second incident may be muted, since consumers may have already reduced or eliminated store visits following the first incident. Out of the 548 incident windows, 69 of them have overlapping weeks. Our main results remain robust (untabulated) if we drop those 69 incident-windows.

zip codes in the sample are classified as leaning towards the Democratic Party, with a standard deviation of 0.362.

Figure 3A presents the distribution of the percentage of political contributions flowing to the Democratic Party in each zip code in the contiguous U.S. Figure 3B presents the average E&S ratings of stores visited by consumers from a zip code in the contiguous U.S. The two figures overlap, in that zip codes with more contributions to the Democratic Party also have more store visits to firms with higher E&S ratings. These figures provide suggestive evidence that consumers with E&S preferences are more likely to shop for products from firms with higher E&S ratings.

Figure 4 plots the positive linear correlation (in red) between consumers' E&S preferences and the average E&S ratings of the firms they visit. From the group with the lowest percentage of contributions to the Democratic Party to the group with the highest percentage, the average E&S rating increases from 54.11 to 56.64, which is about a 4.68% increase.

## 3. Research Design and Main Results

### 3.1 Consumer Store Visits after Firms' Negative E&S Incidents

To study consumer behavior in response to firm-level negative E&S incidents, we use the OLS models (1) and (2) specified below. Specifically, model (1) quantifies the average effects of negative E&S incidents on consumer store visits. Model (2) uses a difference-in-differences identification strategy, which allows us to compare store visits by consumers with differing E&S preferences following negative E&S incidents.

$$Visitors\ per\ Store_{iezw} = \beta_1 Post_{iew} + \alpha_z + \tau_{sm} + \pi_w + \mu_e + \varepsilon_{iezw} \quad (1)$$

$$Visitors\ per\ Store_{iezw}$$

$$= \beta_1\ Post_{iew} + \beta_2\ E\&S\ Consumers_{iez} + \beta_3\ Post_{iew} * E\&S\ Consumers_{iez}$$

$$+ \alpha_z + \tau_{sm} + \pi_w + \mu_e + \varepsilon_{iezw} \quad (2)$$

where *i* denotes firm, *e* denotes incident, *z* denotes consumer zip code, *s* denotes consumer state, *m* denotes year-month, and *w* denotes year-week. *Visitors per Store* is the average number of visitors from a given zip code to a firm's store during one week. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator variable that is equal to one if consumers in a given zip code have strong E&S preferences (i.e., more than 70% of political contributions are donated to the Democratic Party in the zip code), and zero otherwise. To control for time-invariant zip code characteristics, we include zip code fixed effects, $\alpha_z$. We also include state-by-year-month fixed effects, $\tau_{sm}$, which allow us to compare consumer store visit behavior in the same state and year-month. For completeness, we further include year-week fixed effects ($\pi_m$) and incident fixed effects ($\mu_e$).[14] In additional and more granular models, we use consumer county-by-year-month fixed effects to replace state-by-year-month fixed effects to control for large demographic differences across counties, and incident-by-year-week fixed effects to replace incident and year-week fixed effects for within-incident estimation.[15]

The empirical results are presented in Table 3. Column (1) reports the average effects on store visits for all consumers under model (1). The negative and significant coefficient of *Post* suggests that there is a decrease in a firm's store visits after the firm's negative E&S incidents.

[14] Our results remain similar if we replace incident fixed effects with firm fixed effects.
[15] In our sample, many firms have multiple incident windows. Therefore, we include the incident by year-week fixed effects, which are more granular than firm by year-week fixed effects.

The economic interpretation is that a negative E&S event leads to a 0.15% drop in store visitors, on average. This economic magnitude is consistent with prior studies using RepRisk, and likely reflects the fact that most news items in RepRisk are non-dramatic incidents. We report the regression results of model (2) in column (2). The interaction term, *Post*E&S Consumers*, has a negative and significant coefficient. This finding suggests that more E&S-conscious consumers are less likely than their less E&S-conscious counterparts to visit stores whose parent firms have experienced negative E&S incidents. The results hold if we use county-by-year-month fixed effects to replace state-by-year-month fixed effects in columns (3) and (4). Economically speaking, the average number of store visitors drops by 0.44% weekly for more E&S-conscious consumers, which is nearly 4 times higher than that of 0.09% for less E&S-conscious consumers. In our sample, on average, a firm has 67,468 visitors in a week. Following a parent firm's negative incident, however, a store loses about 238 less E&S-conscious visitors and 1,189 more E&S-conscious visitors over the four weeks following negative incidents. In column (5), we further include incident-by-year-week fixed effects, which allow us to conduct within-incident analyses and isolate supply-side factors from contaminating our estimation. The results hold and the economic magnitude of the interaction term is similar to that in column (4).

### 3.2 Robustness Tests of Main Results

In Internet Appendix C, we conduct a battery of additional tests to show the robustness of our main findings. First, we show that our results are robust to cluttering standard errors at various levels and including different fixed effects. Specifically, our results remain similar if we (1) double cluster at the zip code and the firm level, at the zip code and the incident level, or at the zip code and year-week level (Table C.1); and (2) include firm by consumer home county fixed effects,

firm by consumer home zip code fixed effects, or zip code by year-month fixed effects (Table C.2).

Additionally, we exploit alternative dependent variables to measure consumer consumption. Our main results remain robust if we use (1) the (imputed) average number of visits per store as the dependent variable (Table C.3), or (2) the natural logarithm of the total number of visitors, or the (imputed) total number of visits as the dependent variables (Table C.4). The imputed number of visits is estimated at the store-CBG level following the suggestion by SafeGraph. Specifically, we first calculate the average number of visits per visitor to a store and then multiply it by the number of visitors the store has in a CBG. We then aggregate the data at the firm by zip code and by year-week level.

Since our sample period is from January 2018 to Jan 2022, one possible concern is that the Covid-19 pandemic may have influenced consumer behaviour and, consequently, our results. We therefore re-run our main tests using observations in the pre-Covid period only (from 1 Jan. 2018 to 31 Dec. 2019). Our results remain unchanged (Table C.5), which suggests they were unlikely to have been affected by Covid.

Furthermore, we use county-level votes in presidential elections as an alternative measure of E&S preferences. We collect voting data for three presidential elections before 2018: in 2008, 2012, and 2016. We classify consumers as more E&S-conscious if a county elected Democratic candidates in all three elections. We also aggregate foot-traffic data at the firm's store by county and by year-week level and re-run our model (2). Our results remain similar (Table C.6).

Lastly, we use the county-level index of consumer belief in climate change developed by the *Yale Program on Climate Change Communication* as the alternative measure of consumer E&S preferences. We describe the details in Appendix C.7 and present the results in Table C.7. Our main findings remain robust, which confirms that our E&S preference measure accurately

reflects consumer views on environmental issues.

### 3.3 Dynamic Treatment Effects

In this section, we examine the dynamic effects of negative E&S incidents on consumer store visits in the nine-week window. We replace the *Post* indicator in model (2) with indicators for eight weeks - *Week (T-4), Week (T-3), Week (T-2), Week (T), Week (T+1), Week (T+2), Week (T+3), Week (T+4)*. We use *Week (T-1)* as our benchmark and omit it from our model. We further interact these week indicators with the consumer E&S preference indicator. The estimated coefficients of these interactions measure the differing numbers of store visits of more E&S-conscious consumers versus those of less E&S-conscious consumers in the respective individual weeks. We state the empirical model as follows:

$$Visitors\ per\ Store_{iezw} = \beta_1\ E\&S\ Consumers_{iez} + \beta_2\ E\&S\ Consumers_{iez} * Week\ (T-4)_{ie} + \beta_3\ E\&S\ Consumers_{iez} * Week\ (T-3)_{ie} + \beta_4\ E\&S\ Consumers_{iez} * Week\ (T-2)_{ie} + \beta_5\ E\&S\ Consumers_{iez} * Week\ (T)_{ie} + \beta_6\ E\&S\ Consumers_{iez} * Week\ (T+1)_{ie} + \beta_7\ E\&S\ Consumers_{iez} * Week\ (T+2)_{ie} + \beta_8\ E\&S\ Consumers_{iez} * Week\ (T+3)_{ie} + \beta_9\ E\&S\ Consumers_{iez} * Week\ (T+4)_{ie} + \sum_{t=T-4}^{T+4} \gamma_t Week(t)_{ie} + \alpha_z + \tau_{cm} + \pi_w + \mu_e + \varepsilon_{iezw} \quad (3)$$

where *i* denotes firm, *e* denotes incident, *z* denotes consumer zip code, *c* denotes consumer state-county, *m* denotes year-month, and *w* denotes year-week. *Visitors per Store* is the average number of store visitors a firm has from a given zip code in a week. Similar to model (2), negative E&S incidents are in week T. We include all fixed effects in model (2).

We present the results of estimating model (3) in Table 4. The interaction terms between *Week (T-4), Week (T-3), Week (T-2)* and *E&S Consumers* are positive but statistically insignificant. These results suggest that there is no difference in shopping behavior in consumers with different E&S preferences prior to negative E&S incidents. Starting from week T, the interaction terms between week indicators and *E&S Consumers* turn negative and statistically significant. These results support our conjecture that more E&S-conscious consumers are less likely to visit stores following E&S incidents involving store parent companies, compared to their less E&S-conscious counterparts. Interestingly, the magnitude of the interaction coefficients for weeks T+1, T+2, T+3 and T+4 amplifies as time moves farther away from week T. Perhaps it takes time for negative E&S news to be disseminated and have an effect, given that our sample covers many remote counties.[16]

We plot the coefficients of interaction terms in Figure 5. The graph shows a dramatic decrease in store visits by more E&S-conscious consumers post E&S incidents relative to less E&S-conscious consumers, while store visits in the pre-E&S incident period by both cohorts are similar. This evidence is consistent with the parallel-trends assumption behind the difference-in-differences analysis, further solidifying our identification strategy.

### 3.4. Decomposing Environmental and Social Incidents Separately

In our main analyses, we group environmental and social incidents together. To examine whether consumers' shopping behaviors differ when environmental and social incidents are considered individually, we conduct a subsample analysis in this section. We re-run models (1)

[16] In Internet Appendix D, we explore the long-term effects of E&S incidents on the store visit gap and find that the differences between more and less E&S-conscious consumers disappear within six months after the incidents. Relatedly, Derrien et al. (2022) find that these incidents negatively affect analysts' earnings forecasts for up to three years. Gerasimova and Rohrer (2022) document a one-year negative effect on analyst recommendations.

and (2) using subsamples in which environmental and social incidents are considered separately. Results are presented in Table 5. In columns (1) to (3), the sample includes incidents related to environmental issues. In column (1), *Post* loads negatively and significantly, suggesting a decrease in store visitors following negative environmental incidents. In columns (2) and (3), the interaction term of *Post*E&S Consumers* has a negative and significant coefficient. These findings suggest that more E&S-conscious consumers are more likely to reduce their store visits following negative environmental incidents, compared to their less E&S-conscious counterparts. In columns (4) to (6), we use a subsample pertaining to social incidents. Results in columns (4) to (6) are similar to those in columns (1) to (3). Our combined findings in Table 5 indicate that both environmental and social incidents affect more E&S-conscious consumers' shopping behaviour.

## 4. Cross-sectional Analyses

In this section, we conduct several cross-sectional tests to better understand the effects of E&S preferences on consumer consumption.

### 4.1. Incident Severity and Reach

Each negative E&S incident may vary in severity and influence (depending on how widely news of the incident may have spread). We expect that more E&S-conscious consumers will react more strongly to severe and influential E&S incidents than their less E&S-conscious counterparts. To measure the severity and influence of an incident, we rely on the severity and reach indices created by RepRisk for each incident.[17] Each index has a scale from one to three, in which one

[17] According to RepRisk, the official definitions of severity and reach indices are as follows. Severity refers to the severity of the risk incident (i.e., a function of its consequences with respect to ESG issues, the extent of its impact, and its type). Severity index 1 means less severe and 3 means very severe. Reach is the reach of the information source, according to their leadership and circulation. Reach index 1 means limited reach, whereas index 3 means high reach.

indicates the least severe or influential incident, and three indicates the most severe or influential incident. Since a firm may have multiple incidents in an incident week, we aggregate the severity and reach indices at the firm-by-year-week level and create two variables, *Severity* and *Reach*. *Severity* is a continuous variable and represents the degree of severities of all negative E&S incidents for a firm in the incident week. *Reach* is also a continuous variable and measures the degree of influence of all negative E&S incidents for a firm in the incident week.

To examine how more E&S-conscious consumers respond to incidents with various levels of severity and influence, we expand our model (2) by including a three-way interaction term. Specifically, we interact *Severity* and *Reach* with *Post*E&S Consumers*. For completeness, we include all the two-way interaction terms between *Post, E&S Consumers,* and *Severity/Reach*. The results are presented in Table 6. In columns (1) and (2), the triple interaction term *Post*E&S Consumers*Severity* is negative and statistically significant. These results suggest that more E&S-conscious consumers reduce their usual levels of shopping more from firms with severe E&S incidents; in columns (3) and (4), *Post*E&S Consumers*Reach* is also negative and statistically significant, suggesting that such consumers respond more to influential E&S incidents. These findings are consistent with our expectation that severe and influential incidents will have more pronounced effects on more E&S-conscious consumers' store visits.

### 4.2. Demographic Characteristics

We also examine how our findings vary across zip codes with different demographic characteristics. Both anecdotal and academic evidence show that younger and well-educated people care more about E&S issues (Krueger et al. (2021); Bernard, Tzamourani and Weber (2022)). To test whether consumer education levels moderate our main results, we augment our

model (2) by creating a triple interaction term, *Post*E&S Consumers*Bachelor*. *Bachelor* is an indicator variable that is equal to one if the fraction of population with a bachelor's degree or higher in a zip code is above the median of all zip codes in our sample, and zero otherwise. We report the results in columns (1) and (2) of Table 7. The negative and statistically significant coefficient of the triple interaction term suggests that our main findings are more pronounced in areas with well-educated populations. We then examine whether age moderates the relation between consumer E&S preference and consumption. We create an indicator variable *Age below 50*, equal to one if the fraction of population below age 50 in a zip code is above the median of all zip codes in our sample, and zero otherwise. We interact *Age below 50* with *Post* and *E&S Consumers*, and present the results in columns (3) and (4). *Age below 50*Post *E&S Consumers* loads negatively and significantly in both columns, suggesting that our main results are more pronounced in areas with more individuals in a given population under the age of 50.[18]

### 4.3. Firm Characteristics

In this section, we examine how consumers respond to E&S incidents from firms with heterogeneous characteristics. We first investigate firms' advertising intensity, which refers to advertisement expenditure scaled by sales. Research shows that corporate social responsibility (CSR) activities, particularly if coupled with high advertising expenditures, can shape consumer perceptions of a firm as environmentally and socially responsible, and thereby increase firm value (Servaes and Tamayo, 2013). Because the resulting sense of shared values can enhance positive consumer perceptions of E&S incidents, we expect our main results to be stronger for firms with

[18] In untabulated results, we also interact *Post*E&S Consumers* with a dummy indicating high-income areas. The coefficient estimate of the triple interaction term is not statistically significant, suggesting that our results are not likely driven by differences in consumer income.

high advertising intensity. To test this conjecture, we create a dummy variable, *Advertising*, that is equal to one if a firm's average advertising intensity for the pre-sample 2015-2017 period is above the median of all firms in our sample, and zero otherwise. We interact *Advertising* with *Post* and *E&S Consumers* and report the results in columns (1) and (2) in Table 8. The negative and statistically significant triple interaction suggests that more E&S-conscious consumers reduce more store visits from firms with high advertising intensity following negative E&S incidents, compared to their less E&S-conscious counterparts.

Next, we investigate whether a firm's E&S ratings moderate our main results. Firms with high E&S ratings are perceived as more environmentally and socially responsible. When such firms violate E&S standards, consumers may experience a betrayal of trust, which may trigger more pronounced responses via lowered consumption. To test this prediction, we create an indicator variable, *E&S Rating*, that is equal to one if a firm's average E&S rating for the pre-sample 2015-2017 period is above the median of all firms in our sample, and zero otherwise. A firm's E&S rating is measured as the average of its environmental and social ratings listed in the Refinitiv ESG database. We present the test of our conjecture in columns (3) and (4) in Table 8. The triple interaction, *Post*E&S Consumers*E&S Rating*, loads negatively and significantly in both columns. These results suggest that more E&S-conscious consumers reduce more store visits for firms with high E&S ratings following negative E&S incidents compared to their less E&S-conscious counterparts. Economically speaking, the store visit gap between more and less E&S-conscious consumers after negative E&S incidents is 111.1% larger among firms with high E&S ratings.

### 4.4. Local Market Competition

As another cross-sectional test, we examine how local product market competition can shape consumer response to negative E&S incidents. In areas with high-intensity product competition, consumers can easily switch allegiances to newly favored alternative retailers once their trust in a given firm's E&S policies has been eroded. In the same vein, consumers in areas with low-intensity product market competition may find switching allegiances difficult; if only one company offers the product they want, they have nowhere else to go. Given the above, we expect the drop in consumer foot traffic after a negative E&S incident to be more pronounced in areas with high-intensity product market competition. We measure the intensity of market competition using the Herfindahl–Hirschman index (HHI) at the county by the four-digit SIC code level. Specifically, the HHI index is first calculated using sales from the YE Time Series for each year and then averaged for the pre-sample 2015-2017 period. We also create a dummy *HHI>0.25,* indicating high market concentration and low competition.[19]

The results are reported in Table 9. In columns (1) and (2), we use the dummy variable, *HHI>0.25* to indicate areas with less intense product market competition. In columns (3) and (4), we include the continuous measure of market competition, *HHI*. Our results show that the coefficient estimates of the triple interaction term *Post*E&S Consumers*HHI>0.25* and *Post*E&S Consumers*HHI* are positive and significant. These findings suggest that the larger decrease in store visits among E&S-conscious consumers concentrates in areas with more intense product market competition: when alternative product options are available, consumers tend to penalize firms with negative E&S events by shopping elsewhere.

## 5. Store Sales Following Firms' Negative E&S Incidents

[19] We do not use the information on stores from SafeGraph to quantify competition, as the data only cover approximately 300 public firms, which cannot provide a complete picture of market competition.

In Internet Appendix B we provide evidence showing strong correlations between consumer foot traffic and firm sales. In this section, to provide additional evidence linking firms' E&S practices with firm value, we directly test whether negative E&S incidents are associated with lower store-level sales. To conduct the analyses, we rely on detailed store-level data on sales and employment at the annual frequency from the YE Time Series.

Specifically, we first aggregate the sales and employment from YE Time Series at the firm-by-year-by-zip codes level. Then, we calculate the total number of incidents a firm has per year from RepRisk. The empirical model specification is as follows:

$$Log(Sales)_{izt} = \beta_1 No.Incidents_{it} * E\&S\ Consumers_{iz} + \beta_2 No.Incidents_{it} + \beta_3\ E\&S\ Consumers_{iz} + \beta_4 Log(Employment)_{izt} + \alpha_{it} + \tau_{iz} + \pi_{ct} + \varepsilon_{izt} \quad (4)$$

where *i* denotes firm, *c* denotes county, *z* denotes consumer zip code, *t* denotes year. The dependent variable is *Log(Sales)*, the natural logarithm of sales (in thousands) a firm has in a zip code in a year. *E&S Consumers* is an indicator variable that equal to one if consumers in a zip code have strong E&S preferences (i.e., more than 70% of political contributions are donated to the Democratic Party in the zip code), and zero otherwise. *No. Incidents* is the number of E&S incidents a firm has in a year. To account for store-level business environment (e.g., size), we control for *Log(Employment)*, the natural logarithm of the number of employees a firm has in a zip code in a year.

We present the estimation of model (4) in Table 10. In column (1), the coefficient of *No. Incidents* is negatively and statistically significant, suggesting that firms' sales drop significantly after experiencing E&S incidents. On average, one additional E&S incident is associated with a

0.05% drop in sales. Considering that the average firm in our sample has annual sales of $24 billion, on average, one additional E&S incident is associated with a loss of $12 million in sales. In column (2), we again split consumers into two categories, as more and less E&S-conscious. We find firms' store sales drop further in zip codes populated with more E&S-conscious consumers; the economic magnitude doubles. On average, one additional E&S incident is associated with a loss of $9.6 million in sales in less E&S-conscious areas. In more E&S-conscious areas, however, that sales loss is $19.2 million. The results hold in column (3) after adding firm-by-year fixed effects to do within-firm analyses. Collectively, results in Table 10 suggest that consumer E&S preferences are directly associated with firms' sales. These findings further confirm our conjecture that reduced foot traffic is directly associated with less consumption of products and services.

## 6. Conclusion

We investigate consumers' shopping behaviors in response to firm-level negative E&S incidents. We find that there is a decrease in consumer visits to a given firm's commercial locations following a negative E&S incident involving the firm. This decrease is four times larger among Democratic-leaning consumers (who are more E&S-conscious), compared to that among Republican-leaning consumers (who are less E&S-conscious). In addition, the gap in shopping behaviors between more and less E&S-conscious consumers is driven by the severity and influential reach of negative E&S events, a population's education level and age, firms' advertising expenses, firms' E&S ratings, and local product market intensity. As an additional analysis, we test whether negative E&S incidents are associated with firms' annual sales. We find that, on average, one additional E&S incident is associated with a 0.05% drop in firm sales. Furthermore, the drop in sales is about twice as much for more E&S-conscious zip codes, relative to less E&S-

conscious zip codes.

Overall, our findings contribute to the ESG literature by showing that negative information on firms' E&S practice can reduce foot traffic and sales at firms' commercial locations. Consequently, firms' cash flows and value could be affected. Additionally, we contribute to the literature by identifying consumer consumption as a new channel through which individuals' environmental and social preferences can be impactful.

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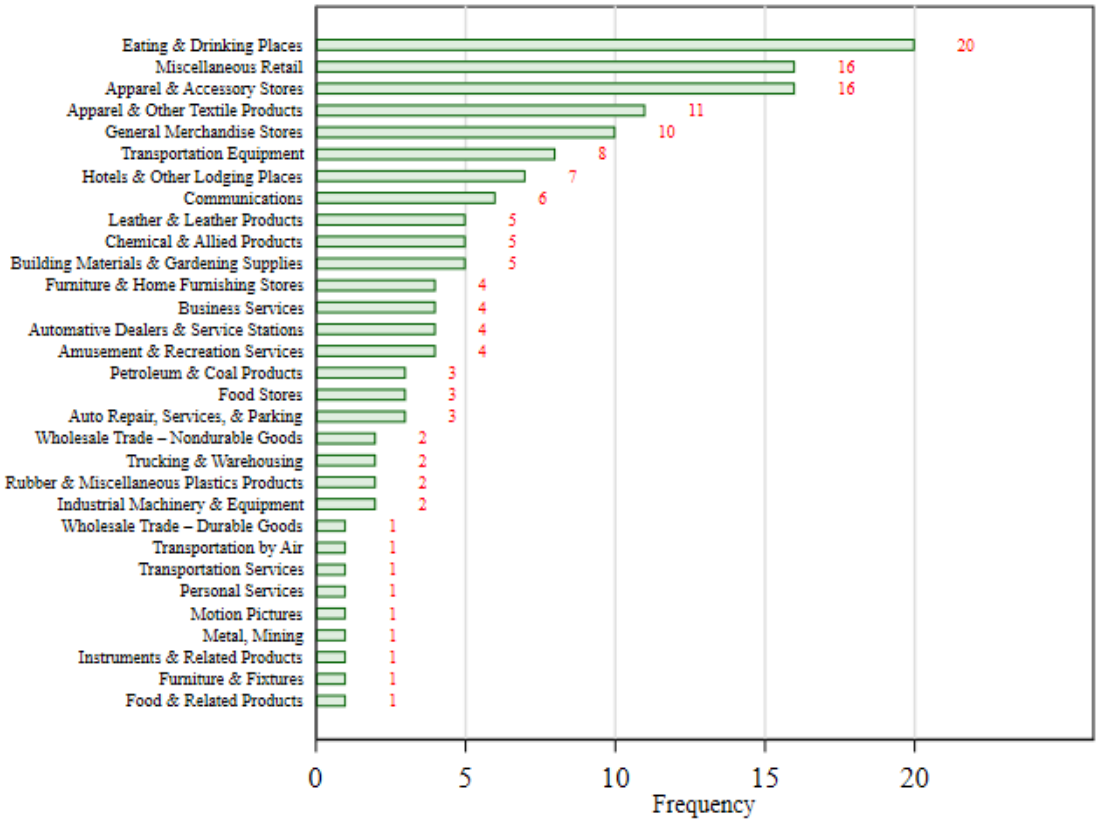
## Appendix: Variable Definitions

| | |
|---|---|
| ***Dependent Variables*** | |
| *Visitors per Store* | The average number of visitors per week from a given zip code to a specific firm's store. |
| *Log(Sales)* | The natural logarithm of sales (in thousands) a firm has in a zip code in a year. |
| ***Key Independent Variables*** | |
| *Post* | Indicator equal to one for the post-incident period including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. |
| *E&S Consumers* | Indicator variable equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. The strong E&S preferences are identified by zip codes with more than 70% of political contributions flowing to the Democratic Party over the pre-sample 2010 – 2017 period. |
| *No. Incidents* | The number of E&S incidents a firm has each year. |
| ***Other Variables*** | |
| *Severity* | The total severities of negative E&S incidents happened in the incident week T. |
| *Reach* | The total reach of negative E&S incidents happened in the incident week T. |
| *Bachelor* | Indicator equal to one if the faction of population with a bachelor's degree or higher in a zip code is above the median of all zip codes in the sample, and zero otherwise. |
| *Age below 50* | Indicator equal to one if the faction of population below age 50 in a zip code is above the median of all zip codes in the sample, and zero otherwise. |
| *Advertising* | Indicator equal to one if a firm's average advertising intensity for the pre-sample 2015-2017 period is above the median of all firms in the sample, and zero otherwise. The advertising intensity is measured as advertisement expenditure scaled by sales. |
| *E&S Rating* | Indicator equal to one if a firm's average E&S rating for the pre-sample 2015-2017 is above the median of all firms in the sample, and zero otherwise. A firm's E&S rating is measured as the mean of its E and S ratings from the Refinitiv ESG database. |
| *HHI* | The Herfindahl–Hirschman index (HHI) of market competition measured at the county by the four-digit SIC code level. The HHI index is first calculated using sales from the YE Time Series data for each year and then averaged for the pre-sample 2015-2017 period. |
| *HHI>0.25* | A dummy indicating low competition. |
| *Log(Employment)* | The natural logarithm of the number of employees a firm has in a zip code in a year. |

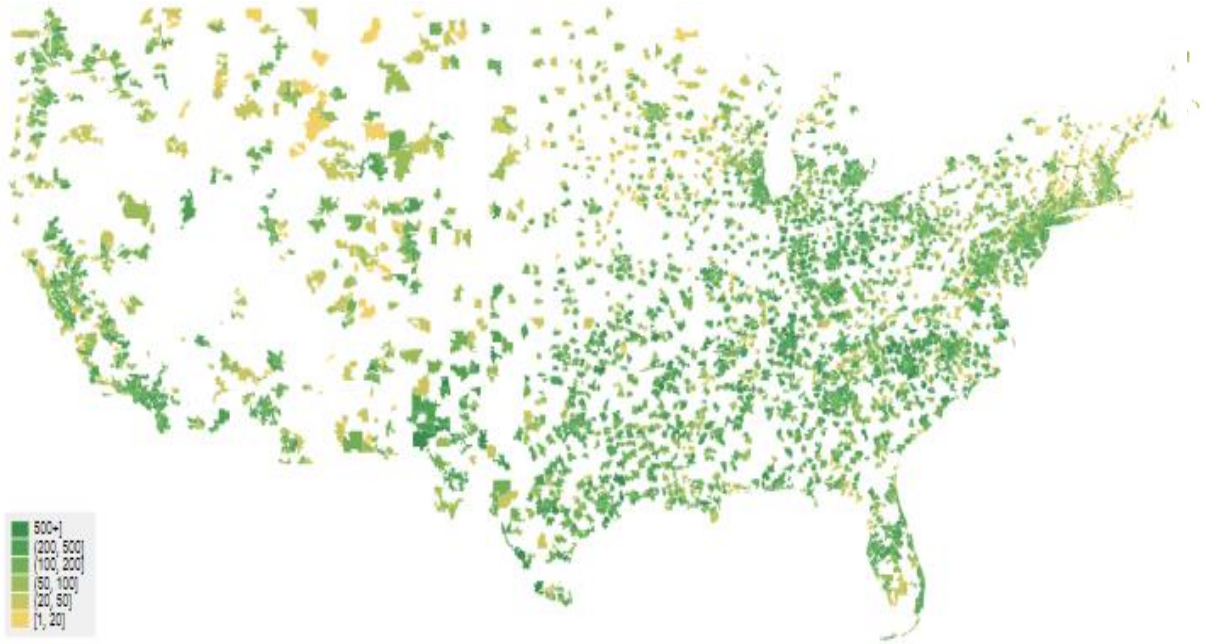
## Figure 1. Industry Distribution

The figure presents the industry distribution of the 151 firms in our sample at the two-digit SIC level.



## Figure 2. The Distribution of Consumers across Zip Codes in the Contiguous U.S.

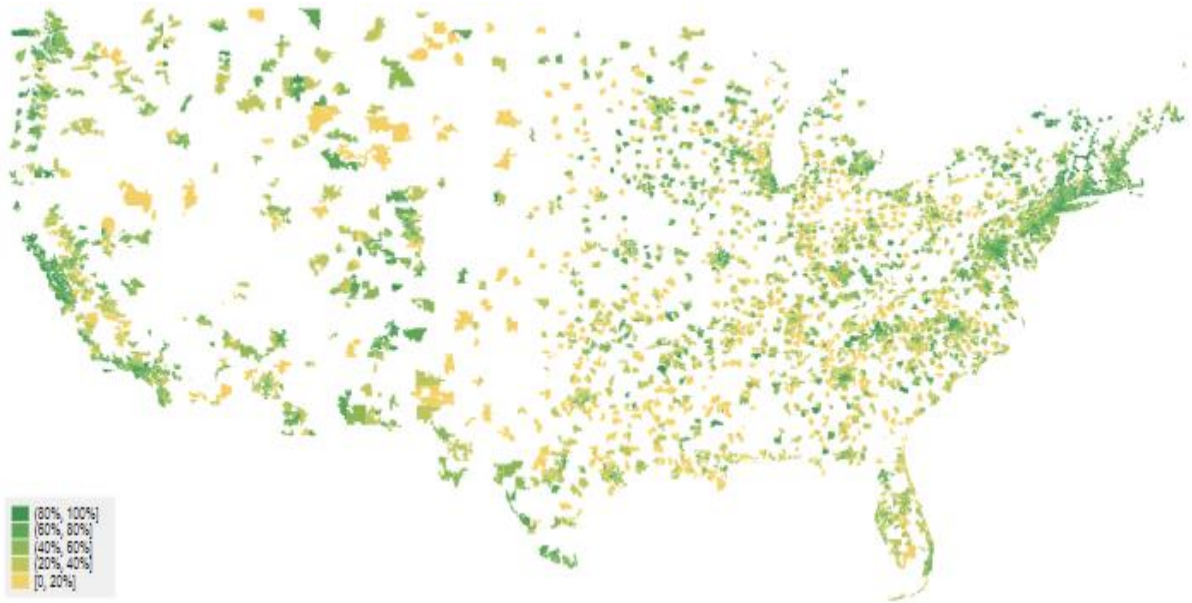
The figure presents the distribution of consumers that visit firms' stores across zip codes in the contiguous U.S. in our sample.



## Figure 3. The Distribution of Political Contributions to the Democratic Party and Average E&S Ratings of Stores Visited by Consumers across Zip Codes in the Contiguous U.S.

Figure A presents the percentage of political contributions flowing to the Democratic Party in each zip code in the contiguous U.S. Figure B presents the average E&S ratings of stores visited by consumers in a zip code in the contiguous U.S. The E&S ratings are at the firm level.

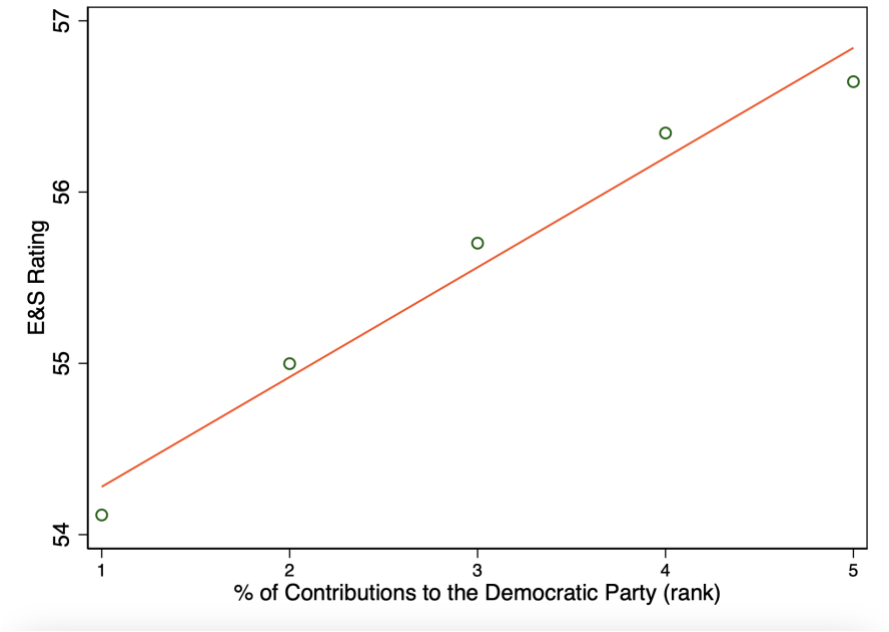
### A. Political Contributions by Consumers to the Democratic Party in a Zip Code




### B. E&S Ratings of Stores Visited by Consumers in a Zip Code

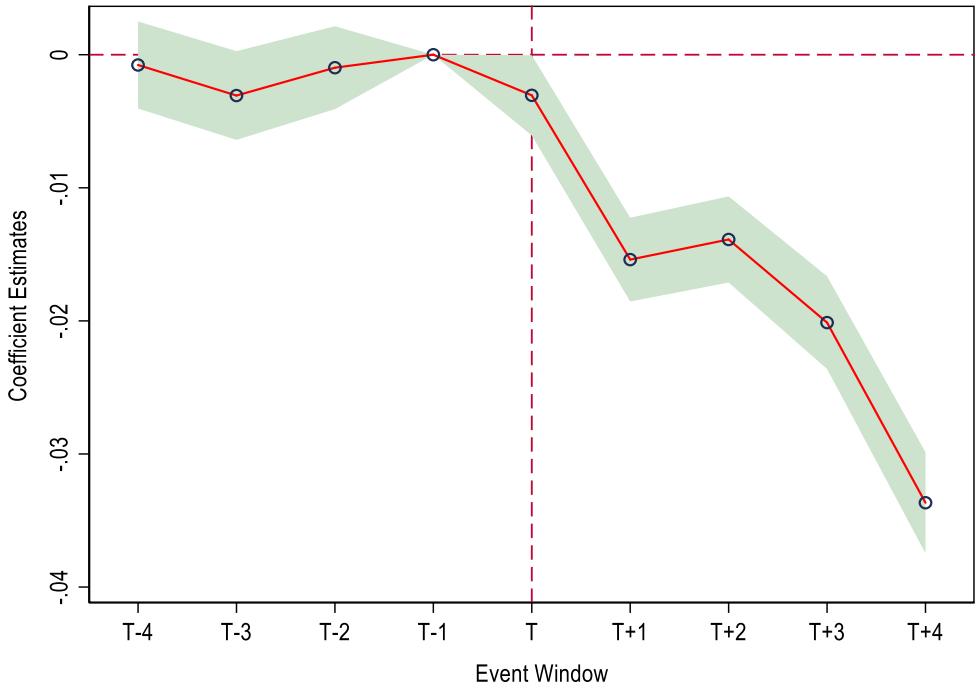
## Figure 4. Consumer E&S Preferences and E&S Ratings of Visited Stores

The figure presents the relation between consumer E&S preferences and the average E&S ratings of the stores they visit. The E&S ratings are at the firm level. The X-axis denotes the rank of the percentage of political contributions in a zip code flowing to the Democratic Party over the pre-sample 2010-2017 period. Rank 1 indicates the lowest percentage. The Y-axis denotes the average E&S rating of stores visited by consumers from a zip code.



## Figure 5. Dynamic Treatment Effects of Negative E&S Incidents on Consumer Store Visits

The figure presents the dynamic treatment effects of negative E&S incidents on store visits by more E&S-conscious consumers relative to less E&S-conscious ones. The negative E&S incidents happened in week T. The pre-treatment period includes weeks *T-4*, *T-3*, *T-2* and *T-1*. The post-treatment period includes weeks *T+1*, *T+2*, *T+3* and *T+4*. Week *T-1* is taken as the benchmark and thus omitted in estimation. The regression estimates of the coefficients are reported in column (2) of Table 4.



## Table 1. Distributions of Industries and Incident Issues

Panel A presents the industry distribution of the 151 firms in our sample at the two-digit SIC level. Panel B presents the issue distribution of the 599 incidents in our sample.

### Panel A. Industry Distribution

| SIC Code | Industry | Frequency | Percentage (%) |
|---|---|---|---|
| 10 | Metal, Mining | 1 | 0.66 |
| 20 | Food & Related Products | 1 | 0.66 |
| 23 | Apparel & Other Textile Products | 11 | 7.28 |
| 25 | Furniture & Fixtures | 1 | 0.66 |
| 28 | Chemical & Allied Products | 5 | 3.31 |
| 29 | Petroleum & Coal Products | 3 | 1.99 |
| 30 | Rubber & Miscellaneous Plastics Products | 2 | 1.32 |
| 31 | Leather & Leather Products | 5 | 3.31 |
| 35 | Industrial Machinery & Equipment | 2 | 1.32 |
| 37 | Transportation Equipment | 8 | 5.3 |
| 38 | Instruments & Related Products | 1 | 0.66 |
| 42 | Trucking & Warehousing | 2 | 1.32 |
| 45 | Transportation by Air | 1 | 0.66 |
| 47 | Transportation Services | 1 | 0.66 |
| 48 | Communications | 6 | 3.97 |
| 50 | Wholesale Trade – Durable Goods | 1 | 0.66 |
| 51 | Wholesale Trade – Nondurable Goods | 2 | 1.32 |
| 52 | Building Materials & Gardening Supplies | 5 | 3.31 |
| 53 | General Merchandise Stores | 10 | 6.62 |
| 54 | Food Stores | 3 | 1.99 |
| 55 | Automotive Dealers & Service Stations | 4 | 2.65 |
| 56 | Apparel & Accessory Stores | 16 | 10.6 |
| 57 | Furniture & Home Furnishings Stores | 4 | 2.65 |
| 58 | Eating & Drinking Places | 20 | 13.25 |
| 59 | Miscellaneous Retail | 16 | 10.6 |
| 70 | Hotels & Other Lodging Places | 7 | 4.64 |
| 72 | Personal Services | 1 | 0.66 |
| 73 | Business Services | 4 | 2.65 |
| 75 | Auto Repair, Services, & Parking | 3 | 1.99 |
| 78 | Motion Pictures | 1 | 0.66 |
| 79 | Amusement & Recreation Services | 4 | 2.65 |
| **Total Number of Firms** | | **151** | **100** |

**Panel B. Incident Issue Distribution**

| Incident Types | Incident Issues | Frequency | Percentage (%) |
|---|---|---|---|
| Environment | Animal mistreatment | 60 | 4.76 |
| | Climate change, greenhouse gas emissions, and global pollution | 48 | 3.81 |
| | Impacts on landscapes, ecosystems, and biodiversity | 167 | 13.24 |
| | Local pollution | 69 | 5.47 |
| | Overuse and wasting of resources | 9 | 0.71 |
| | Waste issues | 49 | 3.89 |
| Social | Child labour | 4 | 0.32 |
| | Discrimination in employment | 66 | 5.23 |
| | Forced labour | 67 | 5.31 |
| | Freedom of association and collective bargaining | 38 | 3.01 |
| | Human rights abuses and corporate complicity | 200 | 15.86 |
| | Impacts on communities | 144 | 11.42 |
| | Local participation issues | 16 | 1.27 |
| | Occupational health and safety issues | 90 | 7.14 |
| | Poor employment conditions | 203 | 16.10 |
| | Social discrimination | 31 | 2.46 |
| **Total Number of Incident Issues** | | **1261** | **100** |
| **Total Number of Unique Incidents** | | **599** | |

## Table 2. Summary Statistics

The table presents the summary statistics of variables used in empirical analyses. Panel A reports the nine-week incident-based main sample. *Visitors per Store* is the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party. *Severity* is the total severities of negative E&S incidents that happened in the incident week. *Reach* is the total reach of negative E&S incidents that happened in the incident week. *Bachelor* is an indicator that is equal to one if the fraction of the population with a bachelor's degree or higher in a zip code is above the median of all zip codes in the sample, and zero otherwise. *Age below 50* is an indicator that is equal to one if the fraction of the population below age 50 in a zip code is above the median of all zip codes in the sample, and zero otherwise. *Advertising* is an indicator equal to one if a firm's advertising intensity is above the median of all firms in the sample, and zero otherwise. Advertising intensity is measured via advertisement expenditure scaled by sales. *E&S Rating* is an indicator equal to one if a firm's E&S rating is above the median of all firms in the sample, and zero otherwise. A firm's E&S rating is measured as the mean of its E and S ratings. *HHI* is the Herfindahl–Hirschman index (HHI) of market competition, measured at the county by the four-digit SIC code level. The HHI index is first calculated using sales from the YE Time Series data for each year and then averaged for the pre-sample 2015-2017 period. *HHI>0.25* is a dummy indicating low market competition. The sample period is from Jan. 2018 to Jan. 2022. Panel B reports the sample for empirical analyses in Table 10. *Log(Sales)* is the natural logarithm of sales (in thousands) a firm has in a zip code in a year. *No. Incidents* is the number of incidents a firm has in a year. *Log (Employment)* is the natural logarithm of the number of employees a firm has in a zip code in a year. The sample period is from 2018 to 2021.

### Panel A. Incident-based Main Sample

| | N | Mean | P10 | Median | P90 | Std. Dev. |
|---|---|---|---|---|---|---|
| ***Dependent variable*** | | | | | | |
| Visitors Per Store | 6,475,300 | 4.54 | 4 | 4.222 | 6.296 | 0.874 |
| ***Independent variables*** | | | | | | |
| Post | 6,475,300 | 0.555 | 0 | 1 | 1 | 0.497 |
| E&S Consumers | 6,475,300 | 0.155 | 0 | 0 | 1 | 0.362 |
| Severity | 6,475,300 | 1.508 | 1 | 1 | 3 | 0.806 |
| Reach | 6,475,300 | 1.956 | 1 | 2 | 4 | 0.983 |
| Bachelor | 6,416,101 | 0.466 | 0 | 0 | 1 | 0.499 |
| Age below 50 | 6,416,101 | 0.427 | 0 | 0 | 1 | 0.495 |
| Advertising | 6,214,398 | 0.338 | 0 | 0 | 1 | 0.473 |
| E&S Rating | 6,159,846 | 0.757 | 0 | 1 | 1 | 0.429 |
| HHI | 5,717,263 | 0.135 | 0.005 | 0.043 | 0.371 | 0.228 |
| HHI>0.25 | 5,717,263 | 0.148 | 0 | 0 | 1 | 0.355 |

**Panel B. Sample for Analyses in Table 10**

| | N | Mean | P10 | Median | P90 | Std. Dev. |
|---|---|---|---|---|---|---|
| ***Dependent variable*** | | | | | | |
| Log(Sales) | 485,192 | 8.016 | 6.504 | 7.903 | 10.58 | 1.297 |
| ***Independent variables*** | | | | | | |
| E&S Consumers | 485,192 | 0.218 | 0 | 0 | 1 | 0.413 |
| No. Incidents | 485,192 | 8.174 | 0 | 4 | 30 | 9.741 |
| Log(Employment) | 485,192 | 3.001 | 1.609 | 2.996 | 5.056 | 1.165 |

## Table 3. Consumer Store Visits after Firms' Negative E&S Incidents

The table presents the effects of a firm's negative E&S incidents on consumer visits to the firm's stores. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party. The sample period is from Jan. 2018 to Jan. 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | Visitors Per Store | | | | |
| Post | -0.007*** | -0.004*** | -0.006*** | -0.004*** | |
| | (0.001) | (0.001) | (0.001) | (0.001) | |
| Post*E&S Consumers | | -0.015*** | | -0.016*** | -0.015*** |
| | | (0.001) | | (0.001) | (0.001) |
| Observations | 6,475,297 | 6,475,297 | 6,473,271 | 6,473,271 | 6,472,975 |
| ZIP Code FE | Yes | Yes | Yes | Yes | Yes |
| State*Year-Month FE | Yes | Yes | No | No | No |
| County*Year-Month FE | No | No | Yes | Yes | Yes |
| Year-Week FE | Yes | Yes | Yes | Yes | No |
| Incident FE | Yes | Yes | Yes | Yes | No |
| Incident*Year-Week FE | No | No | No | No | Yes |
| Adjusted $R^2$ | 0.303 | 0.303 | 0.333 | 0.333 | 0.336 |

## Table 4. Dynamic Treatment Effects of Negative E&S Incidents on Consumer Store Visits

The table presents the dynamic treatment effects of a firm's negative E&S incidents on consumer visits to a firm's stores. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Week (T-4), Week (T-3), Week (T-2), Week (T), Week (T+1), Week (T+2), Week (T+3)* and *Week (T+4)* are week indicators in an incident window. The negative E&S incidents happened in week T. Week T-1 is taken as the benchmark and thus omitted in estimation. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party. The sample period is from Jan. 2018 to Jan. 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) |
|---|---|---|
| | Visitors Per Store | |
| Week (T-4) * E&S Consumers | 0.001 | -0.001 |
| | (0.002) | (0.002) |
| Week (T-3) * E&S Consumers | -0.002 | -0.003 |
| | (0.002) | (0.002) |
| Week (T-2) * E&S Consumers | -0.000 | -0.001 |
| | (0.002) | (0.002) |
| Week (T) * E&S Consumers | -0.003 | -0.003* |
| | (0.002) | (0.002) |
| Week (T+1) * E&S Consumers | -0.014*** | -0.015*** |
| | (0.002) | (0.002) |
| Week (T+2) * E&S Consumers | -0.014*** | -0.014*** |
| | (0.002) | (0.002) |
| Week (T+3) * E&S Consumers | -0.020*** | -0.020*** |
| | (0.002) | (0.002) |
| Week (T+4) * E&S Consumers | -0.034*** | -0.034*** |
| | (0.002) | (0.002) |
| Observations | 6,473,271 | 6,472,975 |
| ZIP Code FE | Yes | Yes |
| County*Year-Month FE | Yes | Yes |
| Year-Week FE | Yes | No |
| Incident FE | Yes | No |
| Incident*Year-Week FE | No | Yes |
| Adjusted $R^2$ | 0.333 | 0.336 |

## Table 5. Measuring the Effects of Environmental and Social Incidents Separately

The table presents the respective effects of a firm's negative environmental and social incidents on consumer visits to the firm's stores. Columns (1) – (3) present the E incidents, and columns (4) – (6) present the S incidents. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party. The sample period is from Jan. 2018 to Jan. 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Visitors Per Store | | | | | |
| | E Incidents | | | S Incidents | | |
| Post | -0.007*** | -0.005*** | | -0.005*** | -0.003*** | |
| | (0.001) | (0.001) | | (0.001) | (0.001) | |
| Post * E&S Consumers | | -0.009*** | -0.011*** | | -0.016*** | -0.015*** |
| | | (0.001) | (0.001) | | (0.001) | (0.001) |
| Observations | 5,571,329 | 5,571,329 | 5,571,157 | 6,185,626 | 6,185,626 | 6,185,383 |
| ZIP Code FE | Yes | Yes | Yes | Yes | Yes | Yes |
| County*Year-Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year-Week FE | Yes | Yes | No | Yes | Yes | No |
| Incident FE | Yes | Yes | No | Yes | Yes | No |
| Incident*Year-Week FE | No | No | Yes | No | No | Yes |
| Adjusted $R^2$ | 0.423 | 0.423 | 0.425 | 0.326 | 0.326 | 0.329 |

## Table 6. Cross-sectional Heterogeneity: Incident Severity and Reach

The table presents the effects of incident characteristics on consumer store visits after firms' negative E&S incidents. Columns (1) and (2) examine incident severities. Columns (3) and (4) examine incident reach. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party. The sample period is from Jan. 2018 to Jan. 2022. *Severity* is the total severities of negative E&S incidents that happened in the incident week. *Reach* is the total reach of negative E&S incidents that happened in the incident week. All two-way interaction terms between the *Post*, *E&S Consumers*, and *Severity/Reach* are included. The sample period is from Jan. 2018 to Jan. 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Visitors Per Store | | | |
| Post * E&S Consumers | -0.006*** | -0.008*** | -0.006** | -0.005** |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Post * E&S Consumers * Severity | -0.006*** | -0.005*** | | |
| | (0.001) | (0.001) | | |
| Post * E&S Consumers * Reach | | | -0.005*** | -0.005*** |
| | | | (0.001) | (0.001) |
| Observations | 6,475,001 | 6,472,975 | 6,475,001 | 6,472,975 |
| Controls | Yes | Yes | Yes | Yes |
| ZIP Code FE | Yes | Yes | Yes | Yes |
| State*Year-Month FE | Yes | No | Yes | No |
| County*Year-Month FE | No | Yes | No | Yes |
| Incident*Year-Week FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.306 | 0.336 | 0.306 | 0.336 |

## Table 7. Cross-sectional Heterogeneity: Demographic Characteristics

The table presents the effects of demographic characteristics on consumer store visits after firms' negative E&S incidents. Columns (1) and (2) examine consumer education. Columns (3) and (4) examine consumer age. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including week T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party. *Bachelor* is an indicator that is equal to one if the fraction of population with a bachelor's degree or higher in a zip code is above the median of all zip codes in the sample, and zero otherwise. *Age below 50* is an indicator that is equal to one if the fraction of population below age 50 in a zip code is above the median of all zip codes in the sample, and zero otherwise. All two-way interaction terms between the *Post*, *E&S Consumers* and *Bachelor/Age below 50* are included. The sample period is from Jan. 2018 to Jan. 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Visitors Per Store | | | |
| Post * E&S Consumers | -0.015*** | -0.012*** | -0.012*** | -0.011*** |
| | (0.001) | (0.002) | (0.002) | (0.002) |
| Post * E&S Consumers * Bachelor | -0.000 | -0.006*** | | |
| | (0.002) | (0.002) | | |
| Post * E&S Consumers * Age below 50 | | | -0.005** | -0.008*** |
| | | | (0.002) | (0.002) |
| Observations | 6,415,804 | 6,413,768 | 6,415,804 | 6,413,768 |
| Controls | Yes | Yes | Yes | Yes |
| ZIP Code FE | Yes | Yes | Yes | Yes |
| State*Year-Month FE | Yes | No | Yes | No |
| County*Year-Month FE | No | Yes | No | Yes |
| Incident*Year-Week FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.306 | 0.336 | 0.306 | 0.336 |

## Table 8. Cross-sectional Heterogeneity: Firm Characteristics

The table presents the effects of firm characteristics on consumer store visits after firms' negative E&S incidents. Columns (1) and (2) examine firms' advertising intensities. Columns (3) and (4) examine firms' E&S ratings. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party. *Advertising* is an indicator equal to one if a firm's average advertising intensity for the pre-sample 2015-2017 period is above the median of all firms in the sample, and zero otherwise. The advertising intensity is measured advertisement expenditure scaled by sales. *E&S Rating* is an indicator equal to one if a firm's average E&S rating for the pre-sample 2015-2017 period is above the median of all firms in the sample, and zero otherwise. A firm's E&S rating is measured as the mean of its E and S ratings. All two-way interaction terms between the *Post*, *E&S Consumers*, and *Advertising/E&S Rating* are included. The sample period is from Jan 2018 to Jan 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Visitors Per Store | | | |
| Post * E&S Consumers | -0.014*** | -0.013*** | -0.009*** | -0.009*** |
| | (0.001) | (0.001) | (0.002) | (0.003) |
| Post * E&S Consumers * Advertising | -0.005** | -0.009*** | | |
| | (0.002) | (0.002) | | |
| Post * E&S Consumers * E&S Rating | | | -0.009*** | -0.010*** |
| | | | (0.003) | (0.003) |
| Observations | 6,214,118 | 6,212,056 | 6,159,575 | 6,157,408 |
| Controls | Yes | Yes | Yes | Yes |
| ZIP Code FE | Yes | Yes | Yes | Yes |
| State*Year-Month FE | Yes | No | Yes | No |
| County*Year-Month FE | No | Yes | No | Yes |
| Incident*Year-Week FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.310 | 0.341 | 0.311 | 0.342 |

## Table 9. Cross-sectional Heterogeneity: Local Market Competition

The table presents the effects of local market competition on consumer store visits after firms' negative E&S incidents. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including week T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party. The *Herfindahl–Hirschman index (HHI)* of market competition is measured at the county by the four-digit SIC code level. The HHI index is first calculated using sales from the YE Time Series for each year and then averaged for the pre-sample 2015-2017 period. *HHI>0.25* indicates high market concentration and low competition. All two-way interaction terms between the *Post*, *E&S Consumers*, and *HHI/HHI>0.25* are included. The sample period is from Jan 2018 to Jan 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Visitors Per Store | | | |
| Post * E&S Consumers | -0.016*** | -0.017*** | -0.016*** | -0.017*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Post * E&S Consumers * HHI > 0.25 | 0.004 | 0.009** | | |
| | (0.004) | (0.004) | | |
| Post * E&S Consumers * HHI | | | 0.012** | 0.015** |
| | | | (0.006) | (0.007) |
| Observations | 5,717,139 | 5,714,656 | 5,717,139 | 5,714,656 |
| Controls | Yes | Yes | Yes | Yes |
| ZIP Code FE | Yes | Yes | Yes | Yes |
| State*Year-Month FE | Yes | No | Yes | No |
| County*Year-Month FE | No | Yes | No | Yes |
| Incident*Year-Week FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.327 | 0.359 | 0.327 | 0.359 |

## Table 10. Sales after Firms' Negative E&S Incidents

The table presents the effects of a firm's negative E&S incidents on its sales. The dependent variable is *Log(Sales)* is the natural logarithm of sales (in thousands) a firm has in a zip code in a year. *E&S Consumers* is an indicator that equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. The strong E&S preferences are measured as zip codes with more than 70% political contributions flowing to the Democratic party over the 2010 – 2017 period. *No. Incidents* is the number of E&S incidents a firm has in a year. *Log(Employment)* is the natural logarithm of number of employees a firm has in a zip code in a year. The sample period is from 2018 to 2021. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) |
|---|---|---|---|
| | Log(Sales) | | |
| No. Incidents | -0.0005*** | -0.0004*** | |
| | (0.0001) | (0.0001) | |
| No. Incidents * E&S Consumers | | -0.0004** | -0.0003** |
| | | (0.0001) | (0.0001) |
| Log(Employment) | 0.9449*** | 0.9449*** | 0.9371*** |
| | (0.0035) | (0.0035) | (0.0034) |
| Observations | 476,384 | 476,384 | 476,384 |
| Firm*Zip Code FE | Yes | Yes | Yes |
| County*Year FE | Yes | Yes | Yes |
| Firm*Year FE | No | No | Yes |
| Adjusted $R^2$ | 0.984 | 0.984 | 0.990 |

**Internet Appendix to**

# "The Economic and Financial Impact of Negative Environmental and Social Practices: Evidence from Consumers Store Visits"

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June 2023

## Appendix A. Examples of Negative E&S Incidents from RepRisk

In this section, we list six examples of negative E&S incidents in our sample from RepRisk.

| No. | Firm | Date | Incident Type | Brief Description |
|---|---|---|---|---|
| 1 | Lululemon Athletica Inc. | 2019-10-15 | Social | Lululemon sourced clothing from a factory in which Bangladeshi female factory workers claimed they were physically assaulted. |
| 2 | FedEx Corp. | 2019-11-13 | Social | A workplace accident resulted in the death of a FedEx employee at the company's Memphis hub. Police and state OSHA investigations followed. |
| 3 | InterContinental Hotels Group PLC | 2019-12-10 | Social | InterContinental Hotels Group was accused of profiting from sex trafficking. |
| 4 | CSX Corp. | 2018-07-24 | Environmental | In the settlement, CSX agreed to help improve surface water quality in the area impacted by the oil spill through a contribution of $500,000 to a state-administered fund to upgrade a water treatment facility in Fayette County, West Virginia. CSX also agreed to pay penalties of $1.2 million to the U.S. and $1 million to West Virginia. |
| 5 | Bed Bath & Beyond Inc. | 2020-10-27 | Environmental | More than 200 Bed Bath & Beyond stores throughout the States unlawfully handled, transported, and disposed of batteries, electronic devices, ignitable liquids, aerosol products, cleaning agents, and other flammable, reactive, toxic, and corrosive materials at local landfills that were not permitted to receive those wastes. |
| 6 | Valero Energy Corp. | 2021-02-22 | Environmental | After equipment froze, a company oil refinery released toxic gases into a local creek, which empties into the Mississippi River, potentially affecting human health. |

## Appendix B. Relation between Firms' Store Visitors and Sales

In this section, we test the relation between the number of visitors to a firm's stores and the firm's sales and operating income. Information on store visitors is from the Safegraph. Information on firm assets, book leverage, employment, operating income, sales, tangibility, R&D and advertising expenditure is from the Compustat. The data is at the firm by year level. Analyses in Table B.1. show a positive and statistically significant relation between a firm's store visitors and its annual sales, change in annual sales, and operating income. A 10% increase in the number of store visitors is associated with a 3.41% increase in firm sales. The evidence suggests that store visitors are good proxies for firms' sales, which builds the foundation for interpreting a reduction in store visits as a reduction in consumption.

## Table B.1. Correlation between Firms' Store Visitors and Sales

The table presents the correlation between the number of visitors to a firm's stores and the firm's sales. The dependent variable is the natural logarithm of a firm's sales in column (1), the annual change in the natural logarithm of a firm's sales in column (2), and a firm's operating income scaled by total assets in column (3). The key independent variable is the natural logarithm of the total number of visitors to a firm's stores per year. Controls include the natural logarithm of total assets, book leverage, tangibility, the natural logarithm of the number of employees, R&D expenditure, and advertising expenditures. The sample period is from 2018 to 2021. The standard errors in parenthesis are clustered at the firm level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) |
|---|---|---|---|
| | Log(Sales) | Change in Log(Sales) | OIBDP/AT |
| Log(No. Visitors) | 0.341*** | 0.399*** | 0.068*** |
| | (0.085) | (0.116) | (0.016) |
| Log(Assets) | 0.253*** | 0.135* | -0.108*** |
| | (0.061) | (0.076) | (0.021) |
| Book Leverage | -0.262*** | -0.079 | -0.035 |
| | (0.076) | (0.116) | (0.034) |
| Tangibility | -0.013 | -0.319* | -0.084* |
| | (0.139) | (0.184) | (0.049) |
| Log(Employment) | 0.498*** | 0.051 | 0.092*** |
| | (0.056) | (0.090) | (0.019) |
| R&D/AT | 0.851 | -7.455* | -3.433 |
| | (5.222) | (3.974) | (3.132) |
| Advertising Expense/Sales | 0.155 | -3.342 | -0.728** |
| | (1.008) | (2.661) | (0.345) |
| Observations | 568 | 563 | 568 |
| Firm FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.995 | 0.299 | 0.832 |

## Appendix C. Robustness Checks of Baseline Results in Table 3

In this section, we conduct a battery of tests to show the robustness of the baseline results, as shown in Table 3.

### C.1. Double Clustered Standard Errors

We first conduct tests by using double clusters to adjust the estimation of the standard errors. Specifically, the standard errors are double clustered at the zip code and the firm level in Table C.1 columns (1) and (2), at the zip code and the incident level in Table C.1 columns (3) and (4), and at the zip code and year-week level in Table C.1 columns (5) and (6). The results remain statistically significant in all six columns, suggesting that the baseline results are not sensitive to different approaches to estimating the standard errors.

### C.2. More Fixed Effects

We also conduct tests with more fixed effects to further control for omitted variables that may bias our estimations. The results are reported in Table C.2. In columns (1) and (2), we add firm by consumer home county fixed effects to control for time-invariant hidden links between firms and counties, e.g., the presence of a firm's production facilities in a county. In columns (3) and (4), we use firm by consumer zip code fixed effects to replace the firm by county fixed effects, to control for time-invariant hidden links between firms and zip codes. This approach allows us exclude concerns that political alignment between consumers and firms may affect store visit behaviors. In columns (5) and (6), we use zip code by year-month fixed effects to replace the county by year-month fixed effects in baseline results, to control for time-varying economic and demographic changes in a zip code. In columns (7) and (8), we include both zip code by year-month and firm by zip code fixed effects. Our results hold in all model specifications.

### C.3. Alternative Measure – Visits per Store

In addition to the number of visitors, SafeGraph also reports the number of visits. However, information on visits is only available at the store level; we therefore do not know which CBGs the visits originated from. To overcome this data limitation, we estimate the number of visits at the store-CBG level following the suggestion by SafeGraph. Specifically, we first calculate the average number of visits per visitor to a store and then multiply it by the number of visitors the store has in a CBG. Then, we aggregate the data at the firm by zip code by week level and construct a new variable, *Visits per Store*, in the same way as before. *Visits per Store* is the imputed average number of visits to a firm's store in a week from a specific zip code. Results using this variable are reported in Table C.3. Consistent with the baseline results, visits by more E&S-conscious consumers to firms with negative E&S incidents drop further than those by less E&S-conscious consumers.

### C.4. Alternative Measures – Log(Visitors) & Log(Visits)

We also use the natural logarithm of visitors and imputed visits to a store from a zip code in a week as the dependent variables. Results using the two variables are consistent and are reported in Table C.4.

### C.5. Alternative Sample – The Pre-Covid Period

The health threats brought by the Covid-19 pandemic, coupled with lockdown policies across regions, caused significant disruptions to business operations and significant changes in consumer shopping behaviors. For example, many consumers switched to online shopping to avoid direct in-person contact during store visits, especially at the beginning of the pandemic.

To avoid any biases in our estimation induced by Covid-19, we conduct additional tests using data before its emergence. Specifically, we only include incidents with windows ending before 31 Dec. 2019 in our analyses. Results using the pre-Covid sample are reported in Table C.5. Our results show that before the arrival of Covid-19, less E&S-conscious consumers, on average, showed no change in their store visits in response to a firm's negative E&S incidents. In contrast, more E&S-conscious consumers significantly reduced their consumption. The findings are consistent with the baseline results.

### C.6. Measuring E&S Preferences Using Presidential Votes

In addition to political contributions within zip codes, we also use individual votes for presidential elections by county as another proxy for E&S preferences. To this end, we collect voting data at the county level for three U.S. presidential elections: in 2008, 2012, and 2016. We classify a county as Democratic if it voted for Democratic candidates in all three elections. Under this classification method, 475 counties are Democratic and 2,679 are Republican. We match the classification to the incident sample and aggregate the data at the firm by county by year-week level. The results are reported in Table C.6 and are consistent.

### C.7. Measuring E&S Preferences Using Belief in Climate Change

We also use the county-level index of belief in climate change developed by the *Yale Program on Climate Change Communication* as the alternative measure of consumer E&S preferences. Specifically, we construct four dummies using the survey data: *E&S Consumers (Human)*, *E&S Consumers (Worried)*, *E&S Consumers (Harm U.S.)*, and *E&S Consumers (Citizens doing more)*. *E&S Consumers (Human)* is an indicator that is equal to one if more than 70% of the population in a given county think that global warming is caused primarily by human activities. *E&S*

*Consumers (Worried)* is an indicator that is equal to one if more than 70% of the population in a county are somewhat/very worried about global warming, and zero otherwise. *E&S Consumers (Harm U.S.)* is an indicator that is equal to one if more than 70% of the population in a county think that global warming will harm people in the U.S. a moderate amount/a great deal, and zero otherwise. *E&S Consumers (Citizens doing more)* is an indicator that is equal to one if more than 70% of the population in a county think that citizens themselves should be doing more/much more to address global warming, and zero otherwise. We match the four measures to the incident sample and aggregate the data at the firm by county by year-week level. Results using the four dummies are reported in Table C.7 and are consistent.

## Table C.1. Robustness Checks: Double Clustered Standard Errors

The table presents robustness checks of the baseline results in Table 3 using double clusters. The standard errors are clustered at the zip code and the firm levels in columns (1) and (2), at the zip code and the incident levels in columns (3) and (4), and at the zip code and the year-week levels in column (5) and (6). The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. These strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party over the 2010 – 2017 period. The sample period is from Jan. 2018 to Jan. 2022. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Visitors Per Store | | | | | |
| | Zip Code + Firm | | Zip Code + Incident | | Zip Code + Year-Week | |
| Post | -0.004 | | -0.004 | | -0.004 | |
| | (0.003) | | (0.004) | | (0.005) | |
| Post*E&S Consumers | -0.016*** | -0.015*** | -0.016*** | -0.015*** | -0.016** | -0.015* |
| | (0.005) | (0.005) | (0.006) | (0.006) | (0.008) | (0.008) |
| Observations | 6,473,271 | 6,472,975 | 6,473,271 | 6,472,975 | 6,473,271 | 6,472,975 |
| ZIP Code FE | Yes | Yes | Yes | Yes | Yes | Yes |
| County*Year-Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year-Week FE | Yes | No | Yes | No | Yes | No |
| Incident FE | Yes | No | Yes | No | Yes | No |
| Incident*Year-Week FE | No | Yes | No | Yes | No | Yes |
| Adjusted $R^2$ | 0.333 | 0.336 | 0.333 | 0.336 | 0.333 | 0.336 |

## Table C.2. Robustness Checks: More Fixed Effects

The table presents the robustness checks of the baseline results in Table 3 with more fixed effects. Columns (1) and (2) add firm by consumer home county fixed effects. Columns (3) and (4) use firm by consumer zip code fixed effects to replace the firm by county fixed effects. Columns (5) and (6) use zip code by year-month fixed effects to replace the county by year-month fixed effects in baseline results. Columns (7) and (8) include both zip code by year-month and firm by zip code fixed effects. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. The strong E&S preferences are identified by zip codes in which more than 70% of residents' political contributions flowed to the Democratic Party over the pre-sample 2010 – 2017 period. The sample period is from Jan. 2018 to Jan. 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | Visitors Per Store | | | | | | | |
| | Firm-by-County FE | | Firm-by-Zip Code FE | | Zip Code-by-Year-Month FE | | Firm-by-Zip Code & Zip Code-by-Year-Month FE | |
| Post | -0.004*** | | -0.003*** | | -0.002*** | | -0.003*** | |
| | (0.001) | | (0.001) | | (0.001) | | (0.001) | |
| Post * E&S Consumers | -0.006*** | -0.005*** | -0.005*** | -0.005*** | -0.019*** | -0.019*** | -0.002** | -0.002* |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Observations | 6,473,267 | 6,472,971 | 6,473,152 | 6,472,856 | 6,462,704 | 6,462,407 | 6,462,561 | 6,462,264 |
| ZIP Code FE | Yes | Yes | No | No | No | No | No | No |
| County*Year-Month FE | Yes | Yes | Yes | Yes | No | No | No | No |
| Year-Week FE | Yes | No | Yes | No | Yes | No | Yes | No |
| Incident FE | Yes | No | Yes | No | Yes | No | Yes | No |
| Incident*Year-Week FE | No | Yes | No | Yes | No | Yes | No | Yes |
| Firm*County FE | Yes | Yes | No | No | No | No | No | No |
| Firm*Zip Code FE | No | No | Yes | Yes | No | No | Yes | Yes |
| Zip Code*Year-Month FE | No | No | No | No | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.475 | 0.478 | 0.680 | 0.683 | 0.375 | 0.378 | 0.693 | 0.697 |

## Table C.3. Robustness Checks: Alternative Measure – *Visits per Store*

The table presents the robustness checks of the baseline results in Table 3 by using visits per store as the dependent variable. *Visits per Store* is the imputed average number of visits per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party over the pre-sample 2010 – 2017 period. The sample period is from Jan 2018 to Jan 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | Visits Per Store | | | | |
| Post | -0.005*** | -0.003* | -0.004*** | -0.002 | |
| | (0.001) | (0.001) | (0.001) | (0.001) | |
| Post*E&S Consumers | | -0.014*** | | -0.014*** | -0.018*** |
| | | (0.002) | | (0.002) | (0.002) |
| Observations | 6,475,297 | 6,475,297 | 6,473,271 | 6,473,271 | 6,472,975 |
| ZIP Code FE | Yes | Yes | Yes | Yes | Yes |
| State*Year-Month FE | Yes | Yes | No | No | No |
| County*Year-Month FE | No | No | Yes | Yes | Yes |
| Year-Week FE | Yes | Yes | Yes | Yes | No |
| Incident FE | Yes | Yes | Yes | Yes | No |
| Incident*Year-Week FE | No | No | No | No | Yes |
| Adjusted $R^2$ | 0.492 | 0.492 | 0.514 | 0.514 | 0.518 |

## Table C.4. Robustness Checks: Alternative Measures – *Log(Visitors) & Log(Visits*)

The table presents the robustness checks of the baseline results in Table 3 by using the natural logarithm of the total number of visitors, and the total number of imputed visits, respectively, that a firm has within a week from a given zip code. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party over the pre-sample 2010 – 2017 period. The sample period is from Jan 2018 to Jan 2022. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Log(Visitors) | | | Log(Visits) | | |
| Post | -0.006*** | -0.006*** | | -0.006*** | -0.005*** | |
| | (0.001) | (0.001) | | (0.001) | (0.001) | |
| Post*E&S Consumers | | -0.003*** | -0.003*** | | -0.003** | -0.003*** |
| | | (0.001) | (0.001) | | (0.001) | (0.001) |
| Observations | 6,473,271 | 6,473,271 | 6,472,975 | 6,473,271 | 6,473,271 | 6,472,975 |
| ZIP Code FE | Yes | Yes | Yes | Yes | Yes | Yes |
| County*Year-Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year-Week FE | Yes | Yes | No | Yes | Yes | No |
| Incident FE | Yes | Yes | No | Yes | Yes | No |
| Incident*Year-Week FE | No | No | Yes | No | No | Yes |
| Adjusted $R^2$ | 0.485 | 0.485 | 0.489 | 0.463 | 0.463 | 0.467 |

## Table C.5. Robustness Checks: Alternative Sample – The Pre-Covid Period

The table presents the robustness checks of the baseline results in Table 3 by focusing on the pre-Covid period. The pre-Covid period includes incidents with windows ending before 31 Dec. 2019. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given zip code to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are indicated by zip codes in which more than 70% of political contributions flowed to the Democratic Party over the pre-sample 2010-2017 period. The sample period is from Jan. 2018 to Dec. 2019. The standard errors in parenthesis are clustered at the zip code level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | Visitors Per Store | | | | |
| Post | -0.001 | 0.001 | -0.000 | 0.001 | |
| | (0.001) | (0.001) | (0.001) | (0.001) | |
| Post*E&S Consumers | | -0.010*** | | -0.010*** | -0.010*** |
| | | (0.001) | | (0.002) | (0.002) |
| Observations | 3,408,628 | 3,408,628 | 3,407,271 | 3,407,271 | 3,407,172 |
| ZIP Code FE | Yes | Yes | Yes | Yes | Yes |
| State*Year-Month FE | Yes | Yes | No | No | No |
| County*Year-Month FE | No | No | Yes | Yes | Yes |
| Year-Week FE | Yes | Yes | Yes | Yes | No |
| Incident FE | Yes | Yes | Yes | Yes | No |
| Incident*Year-Week FE | No | No | No | No | Yes |
| Adjusted $R^2$ | 0.310 | 0.310 | 0.334 | 0.334 | 0.337 |

## Table C.6. Robustness Checks: Measuring E&S Preferences Using Presidential Votes

The table presents the robustness checks of the baseline results in Table 3 by measuring consumer E&S preferences using votes for presidential elections at the county level. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given county to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers* is an indicator that is equal to one if consumers in a county have strong E&S preferences, and zero otherwise. The strong E&S preferences are identified by counties that supported Democratic presidential candidates in 2008, 2012, and 2016 elections. The sample period is from Jan. 2018 to Jan. 2022. The standard errors in parenthesis are clustered at the county level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Visitors Per Store | | | | | |
| Post | -0.011*** | -0.008*** | -0.011*** | -0.008*** | | |
| | (0.001) | (0.001) | (0.001) | (0.001) | | |
| Post * Consumers | | -0.014*** | | -0.010*** | -0.008*** | -0.007*** |
| | | (0.002) | | (0.002) | (0.002) | (0.002) |
| Observations | 2,028,720 | 2,028,720 | 2,028,717 | 2,028,717 | 2,028,408 | 2,028,402 |
| County FE | Yes | Yes | Yes | Yes | Yes | Yes |
| State*Year-Month FE | No | No | Yes | Yes | Yes | Yes |
| Year-Week FE | Yes | Yes | Yes | Yes | No | No |
| Incident FE | Yes | Yes | Yes | Yes | No | No |
| Incident*Year-Week FE | No | No | No | No | Yes | Yes |
| Firm*County FE | No | No | No | No | No | Yes |
| Adjusted $R^2$ | 0.326 | 0.326 | 0.331 | 0.331 | 0.335 | 0.702 |

## Table C.7. Robustness Checks: Measuring E&S Preferences Using Belief in Climate Change Index

The table presents the robustness checks of the baseline results in Table 3 by measuring consumer E&S preferences using county-level belief in climate change developed by the *Yale Program on Climate Change Communication*. Columns (1) – (3) include both E and S incidents. Columns (4) – (6) include E incidents only. The dependent variable is *Visitors per Store* - the average number of visitors per week from a given county to a specific firm's store. *Post* is an indicator variable that is equal to one for the post-incident period, including weeks T, T+1, T+2, T+3, and T+4, and zero otherwise. The negative E&S incidents happen in week T. *E&S Consumers (Human)* is an indicator that is equal to one if more than 70% of the population in a county think that global warming is caused primarily by human activities. *E&S Consumers (Worried)* is an indicator that is equal to one if more than 70% of the population in a county are somewhat/very worried about global warming, and zero otherwise. *E&S Consumers (Harm U.S.)* is an indicator that is equal to one if more than 70% of the population in a county think that global warming will harm people in the U.S. by a moderate amount/a great deal, and zero otherwise. *E&S Consumers (Citizens doing more)* is an indicator that is equal to one if more than 70% of the population in a county think that citizens themselves should be doing more/much more to address global warming, and zero otherwise. The sample period is from Jan. 2018 to Jan. 2022. The standard errors in parenthesis are clustered at the county level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | E&S Incidents | | | | E Incidents | | | |
| | Visitors Per Store | | | | | | | |
| Post * E&S Consumers (*Human*) | -0.010* | | | | -0.003* | | | |
| | (0.006) | | | | (0.002) | | | |
| Post * E&S Consumers (*Worried*) | | -0.012*** | | | | -0.004* | | |
| | | (0.002) | | | | (0.002) | | |
| Post * E&S Consumers (*Harm U.S.)* | | | -0.012*** | | | | -0.006* | |
| | | | (0.003) | | | | (0.003) | |
| Post * E&S Consumers (*Citizens doing more*) | | | | -0.012*** | | | | -0.006** |
| | | | | (0.003) | | | | (0.003) |
| Observations | 2,031,173 | 2,031,173 | 2,031,173 | 2,031,173 | 1,588,993 | 1,588,993 | 1,588,993 | 1,588,993 |
| County FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| State*Year-Month FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Incident*Year-Week FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.335 | 0.335 | 0.335 | 0.335 | 0.405 | 0.405 | 0.405 | 0.405 |

**Appendix D. The Long-term Effects of Negative E&S Incidents on Consumer Store Visits**

Our analyses in Table 4 and Figure 5 show that the response in store visit gap between more and less E&S-conscious consumers continue existing four weeks after negative E&S incidents. A follow-up question is how long the effects may last. To study this question, in this section, we explore the long-term effects of negative E&S incidents on consumer store visits.

To conduct the analyses, in this section, we exploit a panel data structure, rather than the incident-based setting in Table 4. Specifically, we first aggregate the foot-traffic data at the firm by zip code by month level. Then, we calculate the number of negative E&S incidents a firm has every six months in the past two years – *Log(1+No. Incidents)_M6_M1*, *Log(1+No. Incidents)_M12_M7*, *Log(1+No. Incidents)_M18_M13*, and *Log(1+No. Incidents)_M24_M19*. For example, *Log(1+No. Incidents)_M6_M1* is the natural logarithm of one plus the number of negative E&S incidents a firm has in month *t-6* to month *t-1*.

The results are reported in Table D.1. In column (1), the coefficient estimates of *Log(1+No. Incidents)_M6_M1*E&S Consumers*, *Log(1+No. Incidents)_M12_M7*E&S Consumers*, and *Log(1+No. Incidents)_M18_M13*E&S Consumers* are all negative and statistically significant, suggesting that the effects of E&S incidents on foot can last for 1.5 years. However, the significance of *Log(1+No. Incidents)_M12_M7*E&S Consumers*, and *Log(1+No. Incidents)_M18_M13*E&S Consumers* loses in column (2) after we double cluster the standard error at the zip code and the firm level, and in column (3) after we double cluster the standard error at the zip code and the year-month level. The evidence indicates that the robust effects of negative E&S incidents last for around six months. In untabulated results, we break down the *Log(1+No. Incidents)_M6_M1* in columns (2) and (3) into the monthly frequency and interact each with *E&S Consumers*. The effects hold for each month.

## Table D.1. The Long-term Effects of Negative E&S Incidents on Consumer Store Visits

The table presents the long-term effects of a firm's negative E&S incidents on consumer visits to the firm's stores. The standard errors are clustered at the zip code level in column (1), at the zip code and the firm level in column (2), and the zip code and year-month level in column (3). The dependent variable is *Visitors per Store* - the average number of visitors per month from a given zip code to a specific firm's store. *Log(1+No. Incidents)_M6_M1* is the natural logarithm of one plus the number of negative E&S incidents a firm has in month *t-6* to month *t-1*. *Log(1+No. Incidents)_M12_M7* is the natural logarithm of one plus the number of negative E&S incidents a firm has in month *t-12* to month *t-7*. *Log(1+No. Incidents)_M18_M13* is the natural logarithm of one plus the number of negative E&S incidents a firm has in month *t-18* to month *t-13*. *Log(1+No. Incidents)_M24_M19* is the natural logarithm of one plus the number of negative E&S incidents a firm has in month t-24 to month t-19. *E&S Consumers* is an indicator that is equal to one if consumers in a zip code have strong E&S preferences, and zero otherwise. Strong E&S preferences are identified by zip codes in which more than 70% of political contributions flowed to the Democratic Party. The sample period is from Jan. 2018 to Jan. 2022. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) |
|---|---|---|---|
| | Visitors Per Store | | |
| Log(1+No. Incidents)_M6_M1 * E&S Consumers | -0.046*** | -0.046** | -0.046*** |
| | (0.003) | (0.023) | (0.010) |
| Log(1+No. Incidents)_M12_M7* E&S Consumers | -0.019*** | -0.019 | -0.019 |
| | (0.002) | (0.013) | (0.014) |
| Log(1+No. Incidents)_M18_M13* E&S Consumers | -0.011*** | -0.011 | -0.011 |
| | (0.002) | (0.011) | (0.015) |
| Log(1+No. Incidents)_M24_M19* E&S Consumers | -0.001 | -0.001 | -0.001 |
| | (0.003) | (0.011) | (0.010) |
| Observations | 5,871,499 | 5,871,499 | 5,871,499 |
| Firm*Year-Month FE | Yes | Yes | Yes |
| County*Year-Month FE | Yes | Yes | Yes |
| Zip Code FE | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.235 | 0.235 | 0.235 |