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CEO EARLY-LIFE DISASTER EXPERIENCE AND CORPORATE SOCIAL PERFORMANCE

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ABSTRACT

Research Summary: Despite an extensive upper echelons literature on how CEOs' prior experiences influence firm behavior, we know little about the influence of traumatic experiences early in CEOs' lives. Drawing on post-traumatic growth theory, we describe how traumatic experiences early in CEOs' lives influence corporate social performance. Our theory points to the asymmetric impact of CEO early-life trauma on responsible and irresponsible corporate social performance and to two boundary conditions: CEO age at the time of the traumatic event and the severity of the event. We develop and test our arguments in the context of large scale disasters experienced early in the CEO's life. Our findings advance strategic management research on the relationship between CEO experiences and firm outcomes.

Managerial Summary: We consider how traumatic experiences in childhood shape CEO

cognition and values and, therefore, firm behavior. Our findings suggest that CEOs who have had to deal with traumatic early-life events may gain psychological strength from such experiences and that their psychological growth informs firm conduct. Specifically, our findings indicate that experience of trauma early in the CEO's life is positively associated with corporate social performance. The implication is that boards aspiring to enhance this aspect of corporate performance may wish to consider the early-life experiences of prospective CEOs. While early-life experiences are unlikely to feature on a prospective CEO's résumé, the typical selection process for senior executive appointments is well placed to unearth executives' life histories.

INTRODUCTION

Upper echelons theory (Hambrick & Mason, 1984) has given rise to an extensive literature describing how prior experiences shape the cognition and values of senior executives and, therefore, the behavior of the firms they lead (e.g., Bigley & Wiersema, 2002; Chin, Hambrick, & Treviño, 2013; Crossland et al., 2014; Finkelstein et al., 2009; Hambrick, 2007). Latterly, scholars have extended this literature by drawing attention to the formative impact of experiences during sensitive periods early in executives' careers—periods of heightened susceptibility to enduring cognitive imprints (e.g., Jung & Shin, 2019; Marquis & Tilcsik, 2013; Marquis & Qiao, 2020).

While studies exploring the influence of imprints from executives' early-career experiences have proven fruitful, the impact of experiences during childhood/early adolescence (hereafter 'early-life') has mostly been overlooked (with the notable exceptions of Campbell, Jeong, & Graffin, 2019 and Kish-Gephart & Campbell, 2015). The dearth of upper echelons research on executives' early-life experiences sits uncomfortably with a rich literature in psychology pointing to early-life as a principal source of imprints that shape cognition and

behavior in adulthood (e.g., Elder, 1974; Jenks, 1996; Mannheim, 1970). As susceptibility to enduring imprints declines when people move beyond early-life (Immelmann, 1975), a consideration of executives' early-life experiences represents an important gap in upper echelons research on the relationship between executives' prior experiences and firm behavior.

In this study, we describe how the CEO's exposure to traumatic events (events exacting an extreme cognitive and emotional toll) in early-life is reflected in their firm's corporate social performance. We develop our arguments by drawing on the psychology literature describing how traumatic events trigger the development of more complex and robust cognitive and emotional self-regulation (Calhoun & Tedeschi, 1999; Devine et al., 2010; Janoff-Bulman, 2004; Tedeschi & Calhoun, 2004; Zoellner & Maercker, 2006). The psychological growth triggered by traumatic events ('post-traumatic growth') manifests in a heightened commitment to maintaining strong relationships with others and an increased sense of responsibility towards others (Staub & Vollhardt, 2008; Tedeschi, Park, & Calhoun, 1998). Fusing insights from the post-traumatic growth literature with an upper echelons perspective, we describe how traumatic events—large scale disasters—experienced early in the CEO's life have a positive influence on their firm's corporate social performance. We also describe how the relationship is likely to manifest predominantly in avoiding socially irresponsible corporate behavior and the roles of both the CEO's age at the time of the disaster and the severity of the disaster as boundary conditions.

We test our arguments in the context of disaster events (e.g., earthquakes, volcanic eruptions, tsunamis, hurricanes, leading to a significant loss of life) that occurred in the area where the CEO lived during their early-life—an unobtrusive measure of early-life trauma. Upper echelons studies have made extensive use of unobtrusive measures—such as biographical data—to capture managerial traits, including personality, affective state, and psychological disposition

(e.g., Campbell et al., 2019; Chatterjee & Hambrick, 2007, 2011; Kish-Gephart & Campbell, 2015; Petrenko, Aime, Ridge, & Hill, 2016). The use of unobtrusive measures allows scholars to circumvent the challenge of directly measuring such constructs by getting the CEOs to participate in psychometric surveys and/or laboratory tests (Hambrick, 2007).

Our study offers several contributions. First, we contribute to a nascent stream of literature on the relationship between CEOs' early-life experiences (e.g., birth order and social class) and firm behavior (Campbell et al., 2019; Kish-Gephart & Campbell, 2015). Our study highlights the role of traumatic early-life experiences as an important and unstudied aspect of the CEO's life history that shapes firm behavior. In describing this relationship, we underline the utility of engaging with early-life as a sensitive period in executives' lives, giving rise to enduring imprints that are reflected in policies and outcomes of the firms they subsequently lead. Second, we contribute to an emerging body of research in management applying insights from the post-traumatic growth literature to an organizational setting (e.g., Chen, Crossland, & Huang, 2020; Maitlis, 2019; Vogel & Bolino, 2020; Vough & Caza, 2017). We extend this literature by shifting the focus from traumatic events later in life to events during the CEO's early-life and through our exploration of age at the time of trauma and the severity of the traumatic event as boundary conditions. Third, we contribute to management research examining how CEO characteristics and background influence corporate social performance (e.g., Chin, Hambrick, & Treviño, 2013; Petrenko et al., 2016; Tang, Qian, Chen, & Shen, 2015) by describing the asymmetric impact of CEO early-life trauma on socially responsible and socially irresponsible corporate behavior.

BACKGROUND AND HYPOTHESES

Upper echelons and early-life experiences

Building on the concept of bounded rationality (Cyert & March, 1963), upper echelons theory suggests that the CEO views the situation facing their firm through an individualized lens formed by their values and prior experiences (Hambrick & Mason, 1984; Hambrick, 2007). Further, given the centrality of their role, CEOs' values and previous experiences are thought to be reflected in firm strategy and outcomes (Hambrick & Mason, 1984). Upper echelons reasoning has found support in a wide range of studies focused on strategic decision making and firm performance (e.g., Chatterjee & Hambrick, 2007; Crossland, Zyung, Hiller, & Hambrick, 2014). Latterly, upper echelons scholars have begun to explore the influence of executives' childhood experiences (Campbell et al., 2019; Kish-Gephart & Campbell, 2015). These studies have shown that, notwithstanding the span of time, imprints from the CEO's childhood manifest in firm behavior. Kish-Gephard & Campbell (2015), for example, describe how social class-related formative childhood experiences of the CEO can influence strategic risk-taking. In a similar vein, Campbell et al. (2019) describe the impact of imprints associated with CEO birth order on strategic risk-taking.

Interest in executives' early-life experiences has been galvanized by the application of imprinting theory within the management literature (Marquis & Tilcsik, 2013). Imprinting theory emphasizes the importance of 'sensitive periods' when people (and organizations) are more susceptible to external influences (Marquis & Tilcsik, 2013; McEvily, Jaffee, & Tortoriello, 2012). Experiences during these sensitive periods give rise to imprints as a "focal entity develops characteristics that reflect prominent features of the environment, and these characteristics continue to persist despite significant environmental changes in subsequent periods." (Marquis &

Tilcsik, 2013: 199). As these sensitive periods are short-lived, subsequent susceptibility to environmental influences diminishes (Immelmann, 1975). Thus, the imprints of experiences during sensitive periods persist despite subsequent environmental changes (Higgins, 2005; Marquis & Tilcsik, 2013). Consistent with this reasoning, scholars have examined how executive behavior and organizational outcomes are shaped by imprints arising from the state of the economy when executives entered the workplace (Bianchi, 2013), early-career mentors (McEvily et al., 2012), early-career political party membership (Marquis & Qiao, 2020), and undergraduate and post-graduate education (Bai et al., 2020; Jung & Shin, 2019).

Post-traumatic growth

Studies in psychology highlight that imprints from early-life experiences are more enduring and more pronounced when the experience is traumatic (e.g., Cryder, Kilmer, Tedeschi, & Calhoun, 2006; Duran, 2013; Parry & Chesler, 2005). While traumatic experiences can lead to suffering and distress, they can also trigger positive psychological development (Calhoun & Tedeschi, 1999; Janoff-Bulman, 2004; Schaefer & Moos, 1998). Post-traumatic psychological growth is both a process and an outcome of having to adapt to traumatic experiences (Calhoun & Tedeschi, 1999). As a coping mechanism, people are compelled to engage in the process of ruminating on their experience and revisiting their goals and values (Calhoun & Tedeschi, 1999; Tedeschi & Calhoun, 2004). Through this process, people are thought to develop more robust cognitive and emotional self-regulation (Janoff-Bulman, 2004; Zoellner & Maercker, 2006). As both process and outcome, the psychological growth triggered by traumatic experiences manifests in people placing greater emphasis on sustaining meaningful relationships with others and their responsibility towards others (Staub & Vollhardt, 2008; Tedeschi et al., 1998).

Confirmation of the cognitive and behavioral implications of traumatic experiences has been observed in a wide range of settings. People who have experienced traumatic events, such as natural disasters, tend to exhibit a greater focus on maintaining strong interpersonal relationships and greater concern for the well-being of others (Frazier et al., 2013; Staub & Vollhardt, 2008; Zoellner & Maercker, 2006). Scholars reason that a stronger commitment to close relationships emerges from a recognition of personal vulnerability and reliance on others during a traumatic event in the process of recovery (Tedeschi et al., 1998). Similarly, a greater sense of responsibility towards others is thought to reflect the imprinted experience of collective interdependence in trauma recovery (Staub & Vollhardt, 2008).

The positive psychological outcomes from traumatic experiences continue to manifest in adults who experienced traumatic events early in life (Devine et al., 2010; Holgersen et al., 2010; Solomon & Dekel, 2007). Lev-Wiesel and Amir (2006), for example, demonstrate the enduring impact of post-traumatic growth in a study of Holocaust child survivors—at the time of the study, the average age of respondents was 68. Forstmeier et al. (2009) provide strong evidence of post-traumatic growth in a study of former German child soldiers of World War II (subjects had an average age of 78 at the time of the study). Similarly, Maercker and Herrle (2006) found evidence of post-traumatic growth in a study of survivors of the Allied bombings of Dresden in February 1945—52 years after the event.

A parallel literature in neuroimaging research (e.g., Lyoo et al., 2011; Nakagawa et al., 2016) suggests that the enduring psychological imprint of traumatic experiences is associated with a neurological imprint on the prefrontal cortex (PFC). As the PFC plays a central role in how people cope with and respond to stress (Cerqueira, Almeida, & Sousa, 2008), it becomes highly activated during the cognitive processing of traumatic experiences (Nakagawa et al.,

2016). Plasticity and development of the PFC in response to traumatic experience—the neurological imprint of trauma—is thought to underpin strong emotional regulation amongst survivors (Feder, Nestler, & Charney, 2009; Nakagawa et al., 2016). Consistent with the expectation that traumatic experiences leave enduring neurological markers, greater thickness (or volume of interconnected neurons) of the dorsolateral PFC has been observed in trauma survivors compared to control subjects (Lyoo et al., 2011). Similarly, Nakagawa et al. (2016) observed an increase in the volume of high density heavily interconnected neurons in the dorsolateral PFC amongst students who experienced post-traumatic growth following the East Japan Great Earthquake.

CEO early-life disaster experience and corporate social performance

Corporate social performance encompasses engaging in behavior that benefits stakeholders and refraining from behavior that harms stakeholders (responsible and irresponsible corporate social behavior, respectively) (Godfrey et al., 2009; Muller & Kräussl, 2011; Tang, Mack, & Chen, 2018). Consistent with the expectation that CEO characteristics shape firm outcomes, scholars adopting an upper echelons perspective have examined the relationship between CEO characteristics and corporate social performance (e.g., Agle, Mitchell, & Sonnenfeld, 1999; Chin et al., 2013; Koch-Bayram & Wernicke, 2018; Petrenko et al., 2016).

Fusing upper echelons theory with insights from the post-traumatic growth literature, we reason that disaster experienced in the CEO's early-life shapes their firm's corporate social performance. As discussed, the psychological growth triggered by early-life disaster experience leads to people placing greater weight on developing and maintaining strong relationships (Tedeschi et al., 1998). Extended to the level of the CEO and firm relationships, we expect that, reflecting the greater weight placed on developing and maintaining strong relationships, the

CEO's early-life disaster experience positively influences their firm's corporate social performance. We form this expectation as prior studies have pointed to the CEO's commitment to maintaining strong stakeholder relationships as an antecedent of corporate social performance (Galaskiewicz, 1997; Hayward, Rindova, & Pollock, 2004; Hubbard, Christensen, & Graffin, 2017). In a similar vein, Tang et al. (2015) show that hubristic CEOs—i.e., CEOs who place less weight on the importance of strong relationships—tend to engage in more irresponsible corporate behavior. Given that corporate social performance provides the CEO with an opportunity to maintain relationships, we reason that early-life disaster experience will lead to a CEO placing greater focus on their firm's corporate social performance.

Our expectation that the CEO's early-life disaster experience positively influences their firm's corporate social performance is also informed by the relationship between post-traumatic growth and an individual's sense of responsibility towards others. As discussed earlier, the psychological growth triggered by early-life disaster experience leads to people having a heightened recognition of their responsibilities towards others (Staub & Vollhardt, 2008; Zoellner & Maercker, 2006). The CEO's decisions can have a material impact on the welfare of direct stakeholders such as employees and customers and indirect stakeholders, including society at large. While economic motives may underpin the CEO's decision to act responsibly, prior studies suggest that corporate social performance is, at least in part, motivated by senior executives' values and sense of responsibility towards others (Agle et al., 1999; Chin et al., 2013; Muller & Kolk, 2010). That is, CEOs who perceive a heightened duty to act responsibly towards others are thought to place greater weight on the societal implications of corporate decisions (Muller & Kolk, 2010). As a CEO's sense of responsibility to others is reflected in the social performance of the firms that they lead, we reason that a CEO's early-life disaster

experience positively influences their firm's corporate social performance.

In sum, in light of the changes associated with post-traumatic growth, we posit that CEOs with early-life disaster experience will elevate their firms' corporate social performance, as a means of building and maintaining strong relationships with and acting responsibly towards firms' stakeholders.

Hypothesis 1: *A positive relationship exists between CEO early-life disaster experience and their firm's corporate social performance.*

CEO early-life disaster experience and responsible/irresponsible corporate social behavior

Responsible and irresponsible corporate social behavior are subject to different underlying motivations and dynamics, and firms may simultaneously engage in socially responsible and socially irresponsible behavior (Lange & Washburn, 2012; Mattingly & Berman, 2006). When integrated with insights from the post-traumatic growth literature, these studies provide a basis for refining our baseline prediction by describing the asymmetric influence of CEO early-life disaster experience on socially responsible and socially irresponsible corporate behavior.

Recall that the psychological development triggered by traumatic experiences leads to individuals placing greater weight on the importance of the health of their relationships with others (Tedeschi et al., 1998). While both socially responsible and irresponsible corporate behaviors shape stakeholder assessments of a firm and its senior executives, socially irresponsible corporate behavior is thought to have a larger impact on such assessments (Godfrey, 2005; Lange & Washburn, 2012). Socially irresponsible corporate behavior has been found to have a heightened negative impact on the quality of firms' relationships with stakeholders, giving rise to customer boycotts and a sell-off of firms' stocks by investors (e.g., Fu et al., 2020; Klein & Dawar, 2004). Moreover, socially irresponsible corporate behavior

lessens the stakeholder relationship benefits firms derive from engaging in responsible behavior (Muller & Kräussl, 2011). Corroborating this line of reasoning, Chin et al. (2013) show that CEOs with an ideological orientation that places greater weight on the economic benefits of strong relationships and the intrinsic desirability of corporate social performance—liberal CEOs—reduce irresponsible corporate social behavior. Chin et al. (2013) conclude that an ideology more strongly oriented towards the intrinsic value of corporate social performance manifests predominantly in eliminating corporate misdeeds.

Recall also that the psychological development triggered by traumatic experiences leads to people placing greater weight on discharging their responsibility towards others. An extensive literature in management emphasizes that avoiding/minimizing harm is the CEO's foremost responsibility to stakeholders (e.g., Carroll, 1993; Donaldson & Preston, 1995; Quinn & Jones, 1995). Given that socially irresponsible corporate behavior has pronounced negative consequences for stakeholder relationships and is perceived to transgress the CEO's foremost duty towards stakeholders, we reason that CEOs with early-life disaster experience are likely to focus predominantly on addressing this dimension of corporate social performance.

Based on the above discussion, we expect that the relationship between CEO early-life disaster experience and corporate social performance will predominantly manifest in a reduction of socially irresponsible corporate behavior.

Hypothesis 2: *The relationship between CEO early-life disaster experience and corporate social performance is driven predominantly by the avoidance of socially irresponsible corporate behavior.*

CEO age at time of traumatic experience

In developing our baseline hypothesis, we advanced the argument that early-life disaster experience is likely to manifest in CEOs placing a greater focus on corporate social performance, as a means of building and maintaining strong relationships and as a means of acting responsibly towards others. The literatures on psychological development and post-traumatic growth offer a basis for further extending our analysis by exploring the role of CEO age at the time of the early-life disaster experience as a boundary condition in this relationship.

Recall that we focus on early-life disaster experience as childhood/early adolescence is a period of heightened sensitivity to enduring environmental imprints (e.g., Elder, 1974; Jenks 1996; Mannheim, 1970). Early-life is also a period of rapid psychological development (e.g., Cummings et al., 2003). As children progress towards adolescence, their personality traits stabilize in line with their psychological maturation (Capsi, Roberts, & Shiner, 2005). Consistent with the expectation that sensitivity to environmental imprints declines with maturation (Immelmann, 1975), traumatic events experienced earlier in early-life are found to have a more enduring influence (Laceulle, Kleber, & Alisic, 2015; Van der Kolk et al., 1991; Yoshida et al., 2016). Yoshida et al. (2016), for example, show that, amongst childhood/ early adolescent survivors of the Great East Japan Earthquake, post-traumatic growth was more pronounced amongst subjects who were younger at the time of the earthquake. In our setting, the impact of traumatic early-life experiences is likely to have a more formative influence on CEOs whose experience of disaster events occurred in their childhood relative to early adolescence. Accordingly, we posit that the influence of CEO early-life disaster experience on corporate social performance is likely to be amplified when the CEO experienced a disaster event earlier in their childhood. This reasoning leads to the following hypothesis.

Hypothesis 3: *The relationship between CEO early-life disaster experience and corporate social performance is amplified when the CEO experienced the disaster earlier in their childhood.*

Severity of the traumatic experience

As psychological growth following a traumatic event increases with the stress induced by the event, the level of post-traumatic growth that people experience is thought to be positively correlated with the severity of the event (Tedeschi & Calhoun, 2004). In line with this reasoning, studies have shown that the positive psychological consequences of trauma are proportionate to the severity of the traumatic event (Aldwin et al., 1994; Meng, Wu, & Han, 2018; Pargament, Smith, Koenig, & Perez, 1998; Yi & Kim, 2014). Pargament et al. (1998), for example, find a positive relationship between the psychological distress that Oklahoma residents experienced following the 1995 Oklahoma City bombing and their subsequent psychological growth. As the severity of the event is associated with greater levels of post-traumatic growth, we reason that event severity represents a further boundary condition in our baseline relationship. Specifically, we predict that the influence of CEO early-life disaster experience on corporate social performance increases with the severity of the disaster.

Hypothesis 4: *The relationship between CEO early-life disaster experience and corporate social performance increases with the severity of the disaster.*

METHODS

Data and sample

Our base sample was drawn from firms covered by the Fortune 500 list and included 854 firms for the period 1995-2010. We obtained our data from several sources. We identified CEOs' names and company information using the ExecuComp database. We then hand-collected CEOs'

biographical information from multiple sources: Marquis Who's Who, Standard and Poor's Register of Directors and Executives, U.S. Executive Compensation database, Lexis-Nexis, The Notable Names Database (NNDB), LinkedIn., Bloomberg, and companies' official websites. We used the Google search engine to obtain CEOs' biographical information in instances where none of the aforementioned sources contained the required data. We obtained information on disaster events from the following sources: The University of Virginia County and City Data Books service, The U.S. Census Bureau, The U.S. National Geophysical Data Center, Wikipedia.org, The U.S. Geological Survey (USGS), National Weather Service (NWS) of the National Oceanic and Atmospheric Administration, GenDisasters, the U.S. National Climatic Data Center (NCDC), and The International Emergency Disasters Database (EMDAT).

We obtained firms' corporate social performance from MSCI ESG (formerly KLD) and CEO attributes (age, tenure, and gender) from ExecuComp. Firms' financial information and CEO compensation data used to construct our control variables were obtained from the Compustat and ExecuComp databases, respectively. A final sample of 2,333 firm-year observations covering 286 firms for the period 1995-2010 was available to test Hypotheses 1 and 2. The size of the sample used to test Hypotheses 3 and 4 (the roles of CEO age at the time of disaster event and disaster severity as boundary conditions) was smaller due to the focus of these hypotheses on CEOs who had early-life disaster experience.

Dependent variables

We used KLD rating data to construct our measures of corporate social performance. KLD data is generally recognized as the most comprehensive available data on corporate social performance (Petrenko et al., 2016). KLD data has also been utilized widely in empirical research on corporate social performance (Choi & Wang, 2009; Flammer & Luo, 2017; Hillman

& Keim, 2001; Wong, Ormiston, & Tetlock, 2011). The KLD dataset is designed as a binary system. For each strength (i.e., a positive screen) or concern (i.e., a negative screen), KLD includes a '1' indicating the presence of that strength/concern and a '0' otherwise. We measured corporate social performance based on six categories covered by KLD: community, diversity, employees, product, environment, and human rights. The number of screens in each category varies across years. Therefore, for each year, we divided the number of strengths (concerns) for each firm within each category by the maximum possible number of strengths (concerns) in that category (Servaes & Tamayo, 2013). This procedure gave us two indices for each category—a strengths index and a concerns index. Using these indices, we constructed three measures: (1) corporate social responsibility (*CSR)*—the sum of the strengths indices in the six KLD categories, (2) corporate social irresponsibility *(CsiR)*—the sum of the concerns indices in the six KLD categories, and (3) corporate social performance (*CSP*) measured as *CSR* minus *CsiR*. The KLD database was purchased by MSCI ESG in 2010, at which time the indicators for each CSP dimension underwent substantial changes, generating discontinuity in KLD scores. Therefore, to maintain empirical consistency in our corporate social performance measures, we ended our sample in 2010.

Independent variable

As discussed, we focus on disaster events occurring in the area where the CEO lived during their early-life—an unobtrusive measure of early-life trauma. Between 17% and 22% of the U.S. population experience a disaster event during their lifetime (Briere & Elliott, 2000; Kessler et al., 1995) and 11% of people experience a disaster event by their 16th year, with most of those experiences being traumatic (Copeland et al., 2007). Extensive prior studies have established that disaster events trigger enduring post-traumatic growth amongst children and adolescents who

experience such events—i.e., amongst those living in the vicinity (e.g., Bianchini et al., 2017; Chen & Wu, 2017). To capture CEO early-life disaster experience, we began by retrieving biographical information on each CEO in the Fortune 500 firms list, including the place where the CEO was born and the place(s) where they grew up (e.g., attended elementary and middle school), from the sources described above. For 76% of our sample, we were able to obtain biographical information on where the CEO grew up. For the remaining 24%, we took the CEO's birth place as the place where they grew up (Bernile, Bhagwat, & Rau, 2017). Next, we searched for disaster events in the county where the CEO lived during their early-life. Disaster events included earthquakes, volcanic eruptions, tsunamis, hurricanes, tornadoes, wildfires, and other miscellaneous accidents (e.g., airplane crashes) that had 10 or more fatalities (United Nations Statistics Division, https://unstats.un.org/unsd/envstats/index.cshtml). We define *CEO disaster experience* as an indicator variable equal to '1' if a disaster event occurred at least once in the county where the CEO lived between the ages of 5 and 15 years and '0' otherwise. Research in psychology and neuroscience points to this age range as a period of biological and social transition characterized by heightened sensitivity to environmental influences (Blakemore & Mills, 2014; Fuhrmann, Knoll, & Blakemore, 2015). Hence, this period aligns with the sensitive periods emphasized in imprinting theory (e.g., Marquis & Tilcsik, 2013). Our age cutoff also aligns with management literature exploring imprints from early-life experience (e.g., Wang, Du, & Marquis, 2019) and with developmental psychology literature (e.g., Selman, 1980), both of which point to 5 to 15 years of age as the period when people develop their ability to understand events from the perspective of others. Focusing on this period is important given that the subject is not necessarily a direct casualty of the natural disaster. Further, enduring memories

are thought to begin forming from the 5th year and the 15th year is viewed as a natural endpoint for early-life memories (Nelson, 1993).

Boundary conditions variables

In Hypothesis 3, we predict that the relationship between CEO early-life disaster experience and corporate social performance is amplified when the CEO was younger when they experienced the disaster. To test this hypothesis, we created an indicator variable *CEO disaster age 5_10*, equal to '1' if a firm is led by a CEO with disaster experience at age 5 to 10 and '0' otherwise. We select this period as the younger half of our 5 to 15-year age range. In Hypothesis 4, we predict that the relationship between CEO early-life disaster experience and corporate social performance is amplified by the severity of the disaster. We used the death toll from the disaster event to measure disaster severity (Berrebi & Ostwald, 2011). We calculated *Disaster severity* as the (log-transformed) number of fatalities in a disaster. In contrast to event type-specific measures of disaster severity—such as seismic intensity (earthquakes), sea swells (tsunamis), and wind speeds (typhoons)—death toll is a measure that can be uniformly applied across different types of disaster events, thereby facilitating comparison between disaster events in our sample.

Control variables

Our selection of control variables followed prior literature on corporate social performance (e.g., Tang et al., 2015; Petrenko et al., 2016). We controlled for CEO gender, CEO age, and CEO tenure (the log-transformed number of years that the CEO was in the role), each of which could influence the extent of a firm's engagement in corporate social performance. As firm risk-taking and size have each been shown to influence corporate social performance, we included *R&D*, measured as the ratio of R&D expenses over the book value of assets; *CapEx* measured as the

ratio of the sum of fixed capital expenditure over the book value of assets; *Leverage* measured as the ratio of long-term debt over the book value of assets; *Acquisitions* captured as a dummy variable equal to '1' if the firm was engaged in merger and acquisitions (M&A) activities during the fiscal year and '0' otherwise; and *Firm size* measured as the natural logarithm of the book value of total assets. As firm financial performance and access to finance may influence corporate social performance, we included *Profitability* measured as the ratio of income before extraordinary items over the book value of assets and *Financial constraints* measured using the Kaplan and Zingales (1997) financial constraints index. To control for a firm's investment opportunities, we included *Tobin's Q* measured as the market value of assets over the book value of assets. To control for a firm's life cycle, we included *Firm age* measured as the number of years of a firm's financial data available in the Compustat database prior to a firm's fiscal year-end. To control for diversification of a firm's operations, we included *Number of segments* measured as the (log-transformed) number of a firm's business segments. We also controlled for the potential impact of CEO compensation incentives on corporate performance by including the sensitivity of CEO option wealth to stock volatility (*CEO option vega*) and *CEO stock ownership*.

We estimated our baseline model using fixed-effects ('within-firm') panel regression, which controls for all enduring differences (both observable and unobservable) between firms and between headquarters locations, such as industry affiliation as well as the cultural, social, and political landscape of local communities (Tilcsik & Marquis, 2013). Put differently, our model captured variations in corporate social performance in response to variations in CEO early-life disaster experience within a focal firm. As *CEO disaster experience* is a binary variable that is fixed at the CEO level, a change in this variable within a focal firm captures CEO

changes. Accordingly, our within-firm regression analysis effectively captured variations in corporate social performance in response to CEO changes. In all our analyses, we also controlled for possible cohort-related effects by including CEO birth-year and CEO 'grow-up' location fixed effects. We also included year fixed effects to control for potential economy-wide trends in corporate social performance.

RESULTS

In Table 1, we report descriptive statistics and correlation coefficients for the variables used in our study. The sample mean of *CEO disaster experience* is 0.112, indicating that 11.2% of firm-years in our sample had CEOs with early-life disaster experiences. There are 453 CEOs in the sample and 69 of those (15.23% of all CEOs in our sample) experienced a disaster or accident. Among the CEOs who experienced a disaster event in their early-life, 59.42% experienced a geophysical event such as earthquakes, 27.54% experienced a meteorological event such as hurricanes and tornados, 13.04% experienced accidents such as coal mine explosions, fires, and airplane crashes. Further, among the CEOs who experienced a disaster event, their average age at the time of the disaster was 11 years. For the disaster events in our sample, the average death toll was 41 and the average economic loss was approximately $US105 million (2017 $US inflation-adjusted). The highest variance inflation factor is 2.24—well below the threshold of 5, indicating that multicollinearity does not pose a concern in our setting (O'Brien, 2007).

[INSERT TABLE 1 ABOUT HERE]

Baseline analysis

Longitudinal studies typically employ fixed- or random-effects models (Certo & Semadeni, 2006). In choosing a model specification, consideration should be given to (1) the match between

analytic technique and the theory and (2) the validity of the econometric assumptions underlying the analytic technique (Certo, Withers, & Semadeni, 2017). Turning first to (1): Drawing on upper echelons reasoning, we theorize that variations in CEO early-life disaster experience will be reflected in variations in corporate social performance within a focal firm. That is, we hypothesize within-firm effects. Turning next to (2): the untabulated results of the partial Hausman test (Certo et al., 2017) indicate that model estimates based on within-firm variance are different from those based on between-firm variance. These results imply that, in our setting, a fixed-effects regression model (which is based solely on within-firm variance) is more appropriate than a random-effects regression model (which combines both between- and within-firm variance under the assumption that the estimates based on between-and within-firm variance are the same). Based on the above discussion and consistent with prior upper echelons literature (e.g., Chen, Crossland, & Luo, 2015; Fu, Tang, & Chen, 2020; Tang et al., 2018), we conduct our baseline analyses using a fixed-effects model specification.[1]

Hypothesis 1 predicts that CEOs with early-life disaster experience will elevate their firms' corporate social performance. To test this hypothesis, we regressed *CSP* on *CEO disaster experience* and a set of control variables discussed in the previous section. In Table 2, we report the results of this estimation using a set of nested models. The model in column (1) includes only firm-level controls; the model in column (2) includes both firm-and CEO-level controls; the

[1] Our use of fixed-effects estimation is also consistent with literature emphasizing the importance of controlling for unobservable firm-level heterogeneity in corporate social performance (e.g., Flammer & Kasperczyk, 2019; Servaes & Tamayo, 2013) and with prior post-traumatic growth studies (e.g., Shi, Hoskisson, & Zhang, 2017). While within-firm (i.e., fixed-effects) estimation controls for any unobservable firm-level heterogeneity, we acknowledge that this important feature of our empirical approach comes at the cost of reduced statistical power (Certo et al., 2017). However, as such a reduction in statistical power biases against finding the hypothesized effects, within-firm estimation also provides a stronger and more "demanding" testing framework of the hypothesized relationship (Gupta et al., 2020).

model in column (3) is our fully specified baseline model which includes *CEO disaster experience* and a full set of controls. All models were estimated using the Stata "xtreg" command with the "fe" option and the standard errors were adjusted for heteroskedasticity and clustering by firm. The coefficient of *CEO disaster experience* is positive (*p*-value = .045), providing support for Hypothesis 1. The coefficient estimate of *CEO disaster experience* suggests that ceteris paribus, CEO early-life disaster experience is associated, on average, with an increase of 0.287 in *CSP*. Further, the (untabulated) interquartile range of *CSP* in our sample is 0.801. Collectively, these results suggest that CEO early-life disaster experience is associated, on average, with a 35.8% increase in corporate social performance relative to the sample interquartile range.[2]

[INSERT TABLE 2 ABOUT HERE]

We considered the possibility that the reported effect of CEO early-life disaster experience on corporate social performance stems from an omitted correlated variable (or variables), raising potential endogeneity concerns. To examine this issue, we conducted an array of robustness tests which included (1) controlling for CEO political orientation, (2) controlling for the lagged values of *CSP*, (3) restricting our sample to exogenous CEO turnover events, and (4) latent instrumental variable estimation (Lewbel, 2012; Tang et al., 2018; Wang, Zhao, & Chen, 2017). We report and discuss the results of these tests in a supplemental online Appendix. The coefficient estimate of *CEO disaster experience* remains positive in all these tests, supporting causal interpretation of the documented relationship.

[2] We do not measure the size of the effect relative to the sample mean of *CSP*. *CSP* has both positive and negative values in our sample which would offset each other when calculating the sample mean, leading to overestimation of the effect size. To maintain consistency, we proceed with this approach throughout the paper.

Hypothesis 2 predicts that the relationship between CEO early-life disaster experience and corporate social performance is driven predominantly by the avoidance of irresponsible corporate social behavior. To test this hypothesis, we estimated two regression models: one using *CsiR* as the dependent variable and one using *CSR* as the dependent variable. We report the results of this estimation in Table 3. For *CsiR*, the coefficient of *CEO disaster experience* is negative (*p*-value = .000), suggesting that CEOs with early-life disaster experience reduce the socially irresponsible behavior of firms they lead. The effect is economically meaningful: in our sample, CEO early-life disaster experience is associated, on average, with a 45.3% decrease in corporate socially irresponsible behavior relative to the sample interquartile range. For *CSR*, the coefficient of *CEO disaster experience* is indistinguishable from zero (*p*-value = .589). The results also suggest that the magnitude of the *CEO disaster experience* coefficient in the *CsiR* regression is larger than that in the *CSR* regression (*p*-value of the difference test = .031), providing support for Hypothesis 2.

[INSERT TABLE 3ABOUT HERE]

Hypothesis 3 predicts that the positive relationship between CEO early-life disaster experience and corporate social performance is amplified when the CEO experienced the disaster at a younger age. To test Hypothesis 3, we regressed each of the three measures of corporate social performance (namely, *CSP*, *CSiR* and *CSR*) on *CEO disaster age 5_10* and a set of controls from our baseline model. As Hypothesis 3 focuses on CEO age at the time of the disaster, the sample used to test this hypothesis was limited to firms led by CEOs with early-life disaster experience (i.e., observations for which the *CEO disaster experience* variable took a value of '1') and thus had little time variation at the CEO level. Accordingly, we tested Hypothesis 3 using a pooled regression design. We report the results of this analysis in Table 4.

The coefficient of *CEO disaster age 5_10* is negative in the *CSiR* equation (*p*-value = 0.018). The coefficient of *CEO disaster age 5_10* in the *CSR* equation is positive (*p*-value = .015). The coefficient of *CEO disaster age 5_10* in the *CSP* equation is also positive (*p*-value = .001). Collectively, these results provide support for Hypothesis 3. The effects are economically meaningful: in our sample, CEO disaster experience at a younger age is associated, on average, with a decrease (increase) of 58.1% (49.1%) in corporate socially irresponsible (corporate socially responsible) behavior relative to the corresponding interquartile range. As *CSP* captures the difference between *CSR* and *CSiR*, the effect on corporate social performance is economically meaningful as well: in our sample, CEO disaster experience at a younger age is associated, on average, with an increase of 0.679 in corporate social performance.

[INSERT TABLE 4 ABOUT HERE]

Hypothesis 4 predicts that the positive relationship between CEO early-life disaster experience and corporate social performance increases with the severity of the disaster. To test this hypothesis, we regressed our three measures of corporate social performance (i.e., *CSP*, *CsiR* and *CSR*) on *Disaster severity* and a set of control variables from our baseline model. As Hypothesis 4 focuses on disaster severity, the analysis was limited to firms led by CEOs with early-life disaster experience. Therefore, the sample used to test Hypothesis 4 was substantially reduced and has little time variation at the CEO level. Accordingly, analogous to our tests of Hypothesis 3, we tested Hypothesis 4 using a pooled regression design. We report the results of this analysis in Table 5. For *CsiR*, the coefficient of *Disaster severity* is negative (*p*-value = .063). For *CSR*, the coefficient of *Disaster severity* is positive (*p*-value = .004). Similarly, the coefficient of *Disaster severity* for *CSP* is positive (*p*-value = .004). These results lend support to Hypothesis 4. The effects are economically meaningful: in our sample, a one standard deviation

increase in disaster severity is associated, on average, with a decrease (increase) of 34.9% (42.4%) in corporate socially irresponsible (corporate socially responsible) behavior relative to the corresponding interquartile range. As *CSP* captures the difference between *CSR* and *CSiR*, the effect on corporate social performance is economically meaningful as well: in our sample, a one standard deviation increase in disaster severity is associated, on average, with an increase of 0.505 in corporate social performance.

[INSERT TABLE 5 ABOUT HERE]

Additional analysis

To corroborate the mechanism underpinning our findings as well as to gauge the robustness of our results, we carried out an extensive array of supplemental tests. Below, we provide a brief description of these tests; further details are available in an online Appendix.

As discussed, we theorize that CEOs with early-life disaster experience place greater weight on (1) the importance of maintaining strong relationships with others and (2) their responsibility towards others. To cross-validate the theoretical arguments underpinning our findings, we employed textual analysis of transcripts from CEO quarterly earnings calls (Mannor, Wowak, Bartkus, & Gomez-Mejia, 2015). We find that CEO disaster experience is positively associated with both the use of positive attachment words and the use of secondary stakeholder words by the CEO, lending support to our theoretical arguments. We also considered the possibility that our findings are driven by some factor correlated both with the likelihood of a CEO being included in our sample and the CSP of the firm that they lead, resulting in potential selection bias. To address this issue, we examined whether there is a systematic difference in

CSP for firms with missing CEO background information versus firms included in our sample.[3] We also explored the robustness of our findings to alternative thresholds for defining CEO early-life disaster experience as well as alternative measures of corporate social performance. In addition, we considered the possibility that CEOs moved from their birth place during their early-life, which could introduce noise in our measure of CEO early-life disaster experience. In all of these tests our results remained intact.

Consistent with our theorizing, which points to within-firm effects, we estimated our baseline model using a fixed-effects panel estimator. To provide further insight into the relationship between CEO early-life disaster experience and corporate social performance, we estimated a hybrid model (Allison, 2009) which simultaneously captures both within-and between-firm effects. We estimated the model using the Stata "mundlak" command with the "hybrid" option. Results from this analysis corroborate the within-firm effect of CEO early-life disaster experience reported in our main analysis. At the same time, we found no evidence of a between-firm effect. Overall, findings from the hybrid model suggest that the impact of CEO early life experience on corporate social performance manifests predominantly in within-firm relationships.[4]

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[3] We reason that if there is some factor correlated with the probability of a CEO ending up in our sample, the value of that factor (on average) should be different for firms led by CEOs for whom we could obtain background information (i.e., firms included in our sample) versus firms led by CEOs for whom we could not obtain such information. Further, if that factor is also correlated with CSP, we should observe systematic differences in CSP among firms included in our sample versus firms that did not end up in our sample due to missing CEO background information.

[4] The lack of agreement in within-versus-between-firm effects is consistent with prior management studies employing a hybrid model estimation (e.g., Gupta et al., 2020; Hashai, 2018) and may arise from (a) theoretical explanations and/or (b) explanations arising from endogeneity (Certo et al., 2017). Turning first to theory: Our theoretical reasoning suggests that a CEO with early-life disaster experience is likely to elevate corporate social performance of the firm they lead. Our theorising does not imply that CEOs with early-life disaster experience view the performance of peer firms as a salient reference point when determining their firm's level of corporate social

We also assessed the susceptibility of the documented within-firm effect of CEO early-life disaster experience to an omitted variable bias. Here, we followed prior studies (e.g., Quigley et al., 2020) and calculated the threshold for percent bias to invalidate the inference of within-firm effects of CEO early-life disaster experience in the hybrid model. The result of this test shows that, to invalidate our findings, 41% of observations would have to be replaced with observations for which the effect of CEO early-life disaster experience on corporate social performance was zero. We carried out the test using the Konfound-it! statistical package (Frank, 2014). The result of this analysis further attests to the robustness of our findings.

DISCUSSION

In this study, we explored the influence of CEO early-life disaster experience on corporate social performance. In a longitudinal analysis of U.S. firms, we found that CEO early-life disaster experience is positively associated with corporate social performance and that the relationship manifests predominantly in the avoidance of socially irresponsible corporate behavior. Consistent with insights drawn from the literature on post-traumatic growth, we found that the relationship is amplified when the CEO experienced the disaster event earlier in their childhood and is also amplified by the severity of the event.

Our work makes several contributions. First, our study contributes to upper echelons

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performance or that these CEOs seek to elevate their firm's' corporate social performance above that of peer firms—a logic that would point to between-firm effects. Turning next to endogeneity concerns: In a hybrid model, endogeneity arising from an enduring omitted firm-level attribute (or attributes) may lead to a lack of agreement in within-versus between-firm estimations (Certo et al., 2017). For example, in our setting, there may be systematic differences between the firms that CEO's with/without early life disaster experience select into—raising endogeneity concerns in an analysis of between-firm relationships. In contrast, our within-firm (i.e., fixed-effects) estimation controls for potential endogeneity arising from a correlation between CEO early-life disaster experience and an omitted enduring firm attribute (or attributes). In sum, there are both theoretical and empirical considerations that may explain the lack of agreement between results for within- and between firm-relationships in our setting.

literature by challenging the focus on CEOs' professional experiences—experiences during adulthood—in studies seeking to explain the relationship between CEO experiences and firm behavior. Compared to an extensive literature describing the relationship between CEOs' professional experiences and the corporate policies and outcomes (e.g., Hambrick & Cannella, 2004; Hambrick & Mason, 1984; Menz & Scheef, 2014), upper echelons research on CEOs' early-life experiences is notably sparse. This limited attention sits uncomfortably with evidence that early-life experience has a formative and enduring impact (e.g., Elder, 1974; Jenks, 1996; Mannheim, 1970). Our study adds to a nascent literature on how the CEO's early-life shapes firm outcomes by describing the influence of traumatic early-life events. Prior studies have described how aspects of the CEO's early-life that are either fixed (birth order) or semi-stable (social class) influence firm conduct (Campbell et al., 2019; Kish-Gephart & Campbell, 2015). Complementing these studies, we show that discrete events occurring during the CEO's early-life—a period of heightened susceptibility to environmental imprints—influence behavior of the firm they subsequently lead. By providing evidence on how early-life disaster experience influences firm behavior, we hope that our findings motivate further consideration of senior executives' early-life experiences, and in particular formative early-life events, within the upper echelons literature. Our findings also underline the utility of post-traumatic growth as a theoretical lens for exploring the influence of such events.

Second, our findings extend research in management literature examining the impact of traumatic experiences on executive cognition and behavior and firm conduct (e.g., Chen et al., 2020; Greenbaum, Hill, Mawritz, & Quade, 2017; Maitlis, 2019; Vogel & Bolino, 2020; Vough & Caza, 2017). These studies have drawn much-needed attention to the importance of trauma as a construct of interest in the management literature and the need to engage with the

consequences of traumatic experiences. To date, scholars have focused primarily on traumatic experiences during adulthood, such as the death of a colleague or abusive supervision (Chen et al., 2020; Greenbaum et al., 2017). An advantage of this focus is that there is a close temporal relationship between the traumatic experience and subsequent behavior. While early-life trauma is more distal in time to senior executive behavior, our findings demonstrate the utility of casting a longer time horizon when considering the influence of traumatic experiences. Our findings suggest that the management literature on trauma can be usefully extended by attending to sensitive periods in which an individual is more prone to enduring environmental imprints (Marquis & Tilcsik, 2013).

Third, our findings extend upper echelons literature on the relationship between CEO characteristics and corporate social performance (e.g., Chin et al., 2013; Koch-Bayram & Wernicke, 2018; Petrenko et al., 2016; Tang et al., 2015). Much of the literature on the relationship between CEO characteristics and corporate social performance has focused either on overall corporate social performance—typically operationalized as the net of responsible and irresponsible corporate behavior (e.g., Chin et al., 2013), or on responsible corporate behavior alone (e.g., Flammer, 2015). Our findings highlight that each of these approaches is problematic and that a more complete understanding of the relationship between CEO characteristics and corporate social performance is facilitated by separately considering socially responsible and socially irresponsible corporate behavior. While Chen et al. (2020) provide evidence of a link between CEO mortality salience arising from the death of a director at the focal firm and a subsequent increase in corporate social responsibility, our findings suggest that the salutary psychological changes associated with traumatic experiences manifest predominantly in CEOs shunning socially irresponsible corporate behavior. More broadly, our findings underline the

argument that socially responsible and socially irresponsible corporate behavior are distinct constructs and are subject to differing dynamics (Mattingly & Berman, 2006) and add impetus to research decomposing corporate social performance into positive and negative components (Fu et al., 2019; Godfrey et al., 2009; Lange & Washburn, 2012; Muller & Kräussl, 2011).

This study has implications for managerial practice. The executive selection process commonly emphasizes an individual's past achievements and successes. Our findings suggest that executives who have had to deal with traumatic life events may have gained psychological strength from such experiences and that their psychological growth is likely to inform their professional conduct. Thus, rather than focusing solely on professional experience, consideration should also be given to the full span of executives' life experience. Specifically, our findings can help boards and other stakeholders predict prospective CEOs' dispositions towards corporate social performance. As CEOs who have experienced trauma early in life tend to place emphasis on corporate social performance, boards aspiring to enhance this aspect of corporate performance may wish to consider the early-life experience of prospective CEOs. While early-life experiences are unlikely to feature on a prospective CEO's résumé, the typical selection process for senior executive appointments is well placed to unearth executives' rich life histories. Our findings also suggest that boards should be mindful that, when considering executives' life histories, the impact of traumatic experiences on psychological growth is likely to be amplified by the severity of executives' early-life traumatic experiences and the executive's age at the time of the experience.

Limitations and future research

Our study has limitations that give rise to opportunities for further research. Following prior studies in the upper echelons literature, we rely on demographic information to gauge early-life

traumatic experiences. While our findings are consistent with predictions from post-traumatic growth theory, we do not directly examine the theorized mediating mechanisms (personal reflection and rumination leading to psychological growth), as such analysis is not feasible in a large-scale archival study. Smaller-scale studies adopting an interview-based approach or laboratory setting could usefully capture CEOs' reflections on these events. Relatedly, while it is beyond the scope of our study, an exploration of the mechanisms employed by CEOs with early-life disaster experience to enhance corporate social performance would be valuable. Also, we focus on traumatic events during the CEO's formative years as events occurring at this time are thought to have a profound impact on psychological growth (Tedeschi & Calhoun, 2004). However, traumatic events later in life—such as the death of a colleague—can also shape CEO behavior and firm-level outcomes (Shi, Hoskisson, & Zhang, 2017), including corporate social performance (Chen et al., 2020). Lastly, while our theorizing and empirical findings both point to within-firm effects, future research exploring the role of executives' early-life trauma in explaining between-firm differences in corporate behavior would be welcome. We hope that our findings add impetus to research exploring the relationship between executives' experiences of traumatic events and firm-level outcomes.

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Table 1: Summary statistics and correlations

No.	Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	*CSP*	-0.02	0.67																						
2	*CSiR*	0.63	0.59	-0.57																					
3	*CSR*	0.61	0.59	0.58	0.34																				
4	*CEO disaster experience*	0.11	0.32	0.08	-0.06	0.03																			
5	*CEO disaster age 5-10*	0.31	0.48	0.11	-0.12	0.00	na																		
6	*Disaster severity*	2.87	1.66	-0.04	0.11	0.07	na	-0.03																	
7	*CEO age*	55.25	13.25	-0.04	0.03	-0.02	-0.03	-0.18	0.11																
8	*CEO tenure*	1.67	0.87	0.02	-0.13	-0.11	-0.02	0.00	0.12	0.15															
9	*CEO female*	0.02	0.14	0.11	0.04	0.16	-0.03	-0.07	0.02	-0.06	-0.10														
10	*CEO option vega*	4.49	2.26	0.06	0.12	0.19	-0.06	-0.15	-0.11	0.09	-0.04	0.00													
11	*CEO stock ownership*	0.01	0.04	0.05	-0.13	-0.07	0.13	0.39	0.21	0.05	0.28	-0.03	-0.17												
12	*R&D*	0.02	0.03	0.21	-0.02	0.22	0.07	-0.12	0.26	-0.05	-0.03	0.05	0.05	0.10											
13	*CapEx*	0.05	0.04	-0.03	0.02	-0.02	0.08	-0.11	-0.15	0.01	0.02	-0.06	-0.08	-0.05	0.06										
14	*Acquisitions*	0.18	0.39	0.11	-0.03	0.10	-0.01	0.03	0.06	0.02	0.03	-0.00	0.05	0.00	0.20	-0.03									
15	*Leverage*	0.20	0.13	-0.17	0.13	-0.07	-0.05	-0.33	-0.08	0.01	-0.03	0.08	-0.03	-0.15	-0.23	0.14	-0.14								
16	*Firm size*	9.73	1.40	-0.03	0.42	0.39	-0.06	-0.12	-0.23	0.02	-0.08	-0.02	0.23	-0.12	-0.11	-0.29	0.14	-0.09							
17	*Profitability*	0.05	0.07	0.14	-0.06	0.11	0.05	0.27	0.18	0.03	0.07	-0.09	0.03	0.11	0.23	0.21	0.06	-0.23	-0.15						
18	*Financial constraints*	0.20	0.71	-0.12	-0.08	-0.22	-0.04	-0.24	-0.22	-0.03	0.08	0.02	-0.07	0.05	-0.17	0.08	-0.03	0.46	-0.32	-0.34					
19	*Tobin's Q*	1.82	1.17	0.19	-0.15	0.08	0.09	0.22	0.24	-0.02	0.03	-0.04	0.02	0.20	0.49	0.22	0.11	-0.25	-0.18	0.60	-0.13				
20	*Firm age*	38.88	14.98	-0.09	0.31	0.19	-0.07	0.01	0.03	0.05	-0.11	0.02	0.09	-0.26	0.01	-0.02	-0.01	0.27	0.10	0.02	-0.15	-0.11			
21	*Number of segments*	1.43	0.96	-0.01	0.19	0.18	0.05	-0.13	0.06	-0.07	-0.10	0.03	0.11	-0.04	0.32	0.04	0.02	0.01	-0.10	0.13	-0.11	0.18	0.22		
22	*Analyst coverage*	16.38	8.58	0.12	0.04	0.17	0.02	-0.05	-0.10	0.02	0.06	-0.16	0.07	0.07	0.23	0.16	0.18	-0.27	0.3	0.21	-0.14	0.34	-0.20	-0.12	

The sample size is 2,333 firm-year observations for all variables except for *CEO disaster age 5_10* and *Disaster severity.* For the latter two variables, the sample size is 240 firm-year observations, covering a subsample of firms led by CEOs with early-life disaster experience.

Table 2: The effect of CEO early-life disaster experience on corporate social performance

	(1)		(2)		(3)	
Dependent variable:	*CSP*		*CSP*		*CSP*	
	Coefficient.	St.Error	Coefficient	St.Error	Coefficient	St.Error
CEO disaster experience					**0.287**	**(0.142)**
CEO age			0.000	(0.001)	0.001	(0.001)
CEO tenure			0.006	(0.023)	0.004	(0.022)
CEO female			-0.001	(0.171)	0.123	(0.094)
CEO option vega			-0.003	(0.005)	-0.003	(0.005)
CEO stock ownership			0.314	(0.633)	0.147	(0.613)
R&D	-2.572	(1.268)	-2.605	(1.293)	-2.556	(1.291)
CapEx	1.028	(0.537)	1.027	(0.538)	0.998	(0.535)
Acquisitions	0.043	(0.021)	0.044	(0.021)	0.042	(0.021)
Leverage	0.279	(0.319)	0.287	(0.318)	0.305	(0.315)
Firm size	-0.047	(0.075)	-0.044	(0.076)	-0.046	(0.075)
Profitability	-0.176	(0.208)	-0.185	(0.207)	-0.184	(0.206)
Financial constraints	-0.079	(0.046)	-0.081	(0.046)	-0.080	(0.046)
Tobin's Q	-0.038	(0.026)	-0.038	(0.026)	-0.038	(0.026)
Firm age	0.024	(0.009)	0.023	(0.009)	0.024	(0.009)
Number of segments	0.057	(0.032)	0.057	(0.032)	0.061	(0.032)
Analyst coverage	0.006	(0.004)	0.006	(0.004)	0.007	(0.004)
CEO grow-up state fixed effects	Yes		Yes		Yes	
CEO birth-year fixed effects	Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes	
Obs.	2,333		2,333		2,333	
Within R^2	0.25		0.25		0.26	

Tested coefficient is highlighted in bold. Standard errors are adjusted for heteroskedasticity and clustering at firm-level.

Table 3: The effect of CEO early-life disaster experience on corporate social responsibility and corporate social irresponsibility

	(1)		(2)	
Dependent variable:	*CSiR*		*CSR*	
	Coefficient	St.Error	Coefficient	St.Error
CEO disaster experience	**-0.334**	**(0.093)**	**-0.051**	**(0.095)**
CEO age	-0.001	(0.001)	-0.001	(0.001)
CEO tenure	-0.008	(0.014)	-0.004	(0.015)
CEO female	-0.250	(0.093)	-0.127	(0.104)
CEO option vega	0.002	(0.004)	-0.000	(0.004)
CEO stock ownership	-0.655	(0.391)	-0.508	(0.429)
R&D	2.088	(0.987)	-0.467	(0.789)
CapEx	-0.713	(0.372)	0.285	(0.432)
Acquisitions	-0.029	(0.015)	0.012	(0.017)
Leverage	0.162	(0.202)	0.468	(0.241)
Firm size	0.070	(0.049)	0.024	(0.045)
Profitability	-0.008	(0.158)	-0.192	(0.164)
Financial constraints	-0.006	(0.031)	-0.086	(0.035)
Tobin's Q	0.012	(0.017)	-0.025	(0.019)
Firm age	0.054	(0.006)	0.078	(0.007)
Number of segments	-0.029	(0.027)	0.032	(0.021)
Analyst coverage	-0.004	(0.003)	0.002	(0.003)
CEO grow-up state fixed effects	Yes		Yes	
CEO birth-year fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
Obs.	2,333		2,333	
Within R^2	0.52		0.54	

Tested coefficients are highlighted in bold. Standard errors are adjusted for heteroskedasticity and clustering at firm-level.

Table 4: The role of CEO disaster age in the CEO early-life disaster experience - corporate social performance relationship

	(1)		(2)		(3)	
Dependent variable:	*CSP*		*CSiR*		*CSR*	
	Coefficient.	St.Error	Coefficient.	St.Error	Coefficient	St.Error
CEO disaster age 5-10	**0.679**	**(0.202)**	**-0.334**	**(0.136)**	**0.346**	**(0.138)**
CEO age	-0.004	(0.002)	-0.000	(0.002)	-0.004	(0.001)
CEO tenure	0.079	(0.073)	-0.036	(0.062)	0.043	(0.044)
CEO female	3.042	(0.747)	0.260	(0.546)	3.302	(0.619)
CEO option vega	0.048	(0.012)	-0.034	(0.009)	0.015	(0.008)
CEO stock ownership	-4.922	(2.118)	2.980	(1.449)	-1.942	(1.267)
R&D	4.353	(3.281)	-1.599	(1.781)	2.753	(2.021)
CapEx	2.473	(1.187)	-0.835	(1.178)	1.638	(0.969)
Acquisitions	-0.036	(0.064)	0.005	(0.043)	-0.031	(0.058)
Leverage	1.820	(0.587)	-1.039	(0.377)	0.780	(0.534)
Firm size	-0.107	(0.055)	0.187	(0.027)	0.079	(0.042)
Profitability	-0.227	(0.338)	0.363	(0.476)	0.136	(0.400)
Financial constraints	-0.355	(0.127)	0.160	(0.096)	-0.195	(0.089)
Tobin's Q	0.133	(0.054)	-0.099	(0.047)	0.034	(0.035)
Firm age	-0.006	(0.004)	0.007	(0.003)	0.001	(0.003)
Number of segments	-0.142	(0.061)	0.114	(0.056)	-0.028	(0.046)
Analyst coverage	0.008	(0.009)	0.008	(0.007)	0.015	(0.007)
CEO grow-up state fixed effects	Yes		Yes		Yes	
CEO birth-year fixed effects	Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes	
Obs.	240		240		240	
Adjusted R^2	0.74		0.82		0.84	

The models were estimated using a subsample of firms led by CEOs with early-life disaster experience. Tested coefficients are highlighted in bold. Standard errors are adjusted for heteroskedasticity and clustering at firm-level.

Table 5: The role of disaster severity in the CEO early-life disaster experience - corporate social performance relationship

	(1)		(2)		(3)	
Dependent variable:	*CSP*		*CSiR*		*CSR*	
	Coefficient.	St.Error	Coefficient.	St.Error	Coefficient	St.Error
Disaster severity	**0.304**	**(0.101)**	**-0.121**	**(0.064)**	**0.183**	**(0.061)**
CEO age	-0.006	(0.002)	0.001	(0.002)	-0.005	(0.001)
CEO tenure	0.031	(0.084)	-0.016	(0.066)	0.014	(0.049)
CEO female	1.068	(0.443)	1.187	(0.445)	2.255	(0.372)
CEO option vega	0.045	(0.011)	-0.032	(0.009)	0.012	(0.009)
CEO stock ownership	-3.746	(2.250)	2.140	(1.446)	-1.606	(1.119)
R&D	3.341	(2.977)	-1.094	(1.678)	2.247	(1.831)
CapEx	1.041	(1.159)	-0.106	(1.162)	0.935	(0.879)
Acquisitions	-0.061	(0.068)	0.015	(0.037)	-0.047	(0.064)
Leverage	0.666	(0.615)	-0.555	(0.452)	0.111	(0.533)
Firm size	-0.014	(0.062)	0.147	(0.031)	0.133	(0.043)
Profitability	-0.522	(0.266)	0.483	(0.431)	-0.039	(0.436)
Financial constraints	-0.341	(0.133)	0.157	(0.095)	-0.184	(0.099)
Tobin's Q	0.173	(0.056)	-0.119	(0.047)	0.053	(0.039)
Firm age	-0.009	(0.004)	0.008	(0.003)	-0.001	(0.003)
Number of segments	-0.218	(0.087)	0.149	(0.063)	-0.070	(0.057)
Analyst coverage	0.004	(0.009)	0.010	(0.007)	0.014	(0.007)
CEO grow-up state fixed effects	Yes		Yes		Yes	
CEO birth-year fixed effects	Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes	
Obs.	240		240		240	
Adjusted R^2	0.74		0.82		0.85	

The models were estimated using a subsample of firms led by CEOs with early-life disaster experience. Tested coefficients are highlighted in bold. Standard errors are adjusted for heteroskedasticity and clustering at firm-level.