

Does Empathy Matter in Corporate Social Responsibility? Evidence from Emerging Markets*

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Abstract

This paper explores how cross-country differences in *empathy* can explain variations in *corporate social responsibility* (CSR). Using a sample of 4,086 firm-year observations from 15 emerging countries over the period 2010 to 2016, we show that empathy is positively associated with overall CSR, as well as with its social and environmental components. Our results are robust to using the two components of empathy, namely empathic concern and perspective taking. Our findings are further corroborated by evidence from a quasi-natural experiment based on the 2004 Indian Ocean earthquake. We find that during the year of the disaster and the following year, firms located in countries with high empathy donated more money than firms in countries with less empathy.

Keywords: Corporate Social Responsibility, Empathy, Empathic Concern, Perspective Taking, Emerging Markets.

1. Introduction

Corporate social responsibility (CSR)¹ has been studied primarily among North American firms, and variations in firms' CSR engagement across countries, especially within emerging markets, have seldom been investigated. In one of the first studies to examine factors that affect the variation in firms' CSR engagement across a large number of countries, including those with emerging markets, Ioannou and Serafeim (2012) find that the political system, followed by the labor and educational system and the cultural system, are the most important categories of "national business systems" that affect institutions' CSR. Further, Cai et al. (2016) show that CSR engagement is greater in countries with higher income per capita, strong civil liberties and political rights, and cultures oriented toward harmony and autonomy. Liang and Renneboog (2017) provide evidence that a country's legal origin is a strong predictor of the adoption of CSR; more specifically, they show that firms from common-law countries have lower CSR scores than companies from civil-law countries, with Scandinavian civil-law firms having the highest CSR ratings. More recently, El Ghouli et al. (2019) examine whether an extralegal institution, the media, affects CSR performance. They find that firms located in countries in which the media has relatively more freedom engage in more CSR activities than firms located in countries with media restrictions. Finally, Griffin et al. (2018) find that the cultural value individualism is positively associated with firm-level CSR practices.

In addition to studies examining country-level determinants of CSR, other studies have investigated the effect of several firm-level characteristics on CSR performance. In an

¹ CSR has been defined in countless ways, ranging from a narrow to a broad definition (e.g., Friedman, 1970; Carroll, 1979; Holme and Watts, 2000; Hopkins, 2003; Scherer and Palazzo, 2008). For instance, according to Carroll (1979) "social responsibility of business encompasses the economic, legal, ethical and discretionary expectations that society has of organisations at a given point of time". A more recent and simple definition was proposed by the World Business Council for Sustainable Development's (2008) where corporate social responsibility is defined as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large".

international context, El Ghoul et al. (2016) find lower CSR engagement in family firms, while Boubakri et al. (2019) show that privatized firms have better CSR scores than other publicly listed firms. Boubakri et al. (2016) document that cross-listed firms have better CSR performance than non-cross-listed domestic firms. They also find that CSR increases significantly after cross-listing in U.S. markets and that this relationship is stronger for firms from countries with weaker institutions and lower country-level sustainability.

The rapidly growing literature on corporate social responsibility is in part driven by the importance of CSR practices to companies' stakeholders. As stressed by Korschun, Bhattacharya, and Swain (2014), CSR is important in today's socially conscious market environment, and it is increasingly shaping corporate agenda regardless of a firm's size, business model, sector of activities or location. The importance of CSR is evidenced in how it affects a company's valuation. Boubakri et al. (2016), for instance, show that cross-listed firms invest more in CSR and exhibit higher valuation. In addition, El Ghoul et al. (2017) demonstrate that CSR is positively related to firm value in countries with weaker market institutions and conclude that CSR could help firm compensate for institutional weaknesses. Also, Boubakri et al. (2019) show that privatized firms exhibit higher CSR performance, and that this translates into higher firm valuation and lower equity financing cost.

This paper seeks to examine whether and how cross-country differences in trait empathy can explain variations in firms' CSR performance. Empathy is a broad concept that refers to the responses of an individual to the witnessed experiences of another. It has two components: affective and cognitive. The affective component refers to joining and sharing the emotional responses of another person (e.g., Batson, 1991) while the cognitive component refers to the understanding of another person's viewpoint and feelings (Kohler, 1929). Our interest in trait

empathy originates from psychology research and theory suggesting that trait empathy is positively associated with prosocial and pro-environmental behaviors (Davis, 1983; Eisenberg and Miller, 1987; Borman, Penner, Allen, and Motowidlo, 2001; Berenguer, 2007; Gruhn, Rebucal, Diehl, Lumley, and Labouvie-Vief, 2008; Berenguer, 2010).

Regarding prosocial behavior, prior literature shows that more empathic individuals volunteer more, donate more to charity, and are more likely to help others in need (e.g. Borman, Penner, Allen, and Motowidlo, 2001; Gruhn, Rebucal, Diehl, Lumley, and Labouvie-Vief, 2008; Konrath, Ho, and Zarins, 2016). As for pro-environmental behavior, Schultz (2001) shows a positive correlation between empathy and both biospheric-environmental and altruistic-environmental concerns. Moreover, Berenguer (2007) finds that empathy is associated with more donations to an environmental protection association while Berenguer (2010) documents, in an experimental setting that participants with high empathy levels provide more arguments of moral reasoning about the environment. Given the positive effects of individuals' empathy on prosocial and proenvironmental behavior, we argue that empathy could also matter to firm CSR engagements. More specifically, we hypothesize that empathy is positively associated with CSR performance, in particular with social and environmental performance.

To test our hypothesis, we use CSR scores from the Asset4 database. We focus on two pillars: the social pillar and the environmental pillar. According to the Asset4 glossary, "[t]he social pillar measures a company's capacity to generate trust and loyalty with its workforce, customers and society, through its use of best management practices." An important component of the social pillar that is closely linked to prosocial behavior is the society/community category. This category "reflects a company's capacity to maintain its license to operate by being a good citizen (donations of cash, goods or staff time, etc.),

protecting public health (avoidance of industrial accidents, etc.) and respecting business ethics (avoiding bribery and corruption, etc.)” (Asset4 glossary). The environmental pillar “measures a company’s impact on living and non-living natural systems, including the air, land and water, as well as complete ecosystems. It reflects how well a company uses best management practices to avoid environmental risks and capitalize on environmental opportunities in order to generate long term shareholder value” (Asset4 glossary).

To measure empathy, we rely on country-level empathy measures derived by Chopik et al. (2017) through an online survey of 104,365 participants across several countries.² Participants were asked to complete the Interpersonal Reactivity Index (IRI) (Davis, 1983), which includes two empathy components: the cognitive other-focused (perspective taking) component and the affective other-focused (empathic concern) component.³ Our sample is composed of 4,086 firm-year observations from 15 emerging countries over the period 2010 to 2016.

Our focus on emerging markets is motivated by several reasons. First, despite the increasing attention that has been given to CSR in emerging markets, it remains underrepresented in the literature as compared to CSR in developed countries (Pisani et al., 2017). Second, in emerging economies, capital markets, regulatory systems, and contract enforcement mechanisms are weak, if not absent (Khanna and Palepu, 1997, 2011). Thus, firms must develop strategic responses to overcome these voids. El Ghoul et al. (2017) argue that CSR can be considered as a “Non-market” strategy for addressing institutional voids. Third, Muller and Kolk (2009) argue that firms in developing countries deal with CSR in a fundamentally different way than firms in

² We would like to thank the authors for sharing their data with us.

³ The empathic concern subscale reflects a person’s other-oriented feelings of compassion for others, which represent an emotional component of empathy (e.g., “I often have tender, concerned feelings for people less fortunate than me”), whereas the perspective taking subscale reflects a person’s tendency to imagine others’ points of view, which represents a cognitive or intellectual component of empathy (e.g., “I sometimes try to understand my friends better by imagining how things look from their perspective”).

developed countries, mainly because of the differences in value systems or the institutional environment. Finally, by focusing on emerging economies, our study could help in informing a broad audience including investors, regulators and researchers who are interested in those countries.

Our empirical results show strong evidence that firms located in countries with high empathy have higher CSR scores. The positive association between CSR and empathy continues to hold when we examine the two components of a firm's overall CSR rating (the environmental rating and the social rating) separately and when we use each of the two components of empathy (empathic concern and perspective taking). Furthermore, our results are supported by a quasi-natural experiment based on the 2004 Indian Ocean earthquake. Using this quasi-natural experiment, we find that firms located in countries with high levels of empathy donated more money than those located in countries with low levels of empathy.

The present paper contributes to the literature in several ways. First, to the best of our knowledge, this is the first study to examine whether a psychological trait affects the CSR engagement of firms. Thus, we add to the literature investigating CSR antecedents, including firm characteristics (performance, financial constraints, and the like) and country characteristics (ownership concentration, political institutions, globalization, financial system, cultural system, and the like).

Second, this study contributes to the literature showing that personality traits, such as overconfidence, optimism, and narcissism, affect firms' decisions (Heaton, 2002; Malmendier and Tate, 2008; Deshmukh et al., 2013; Aktas et al., 2016). These findings in the financial literature are consistent with results in the psychological literature arguing that psychology matters in decision-making (Frydman and Camerer, 2016).

Third, despite the growing interest for CSR in non-developed countries (Kolk and Lenfant, 2010), the literature has fallen short on examining how CSR manifests itself in those countries as compared to developed ones (Egri and Ralston, 2008; Preuss, Barkemeyer, Glavas, 2016; Pisani et al., 2017). Thus, our study helps address the relative lack of attention that has been given to CSR in emerging markets. In addition, most prior studies examining CSR in emerging markets restrict their sample to a single country (e.g., Ortas et al., 2012; Guo et al., 2018) or to a particular geographic region, such as Asia (Cheung et al., 2010; Su et al., 2016). Our sample includes firms from 15 countries spanning four geographic regions: Europe, America, Africa, and Asia.

Fourth, while the studies by Ioannou and Serafeim (2012), Cai et al. (2016), Liang and Renneboog (2017), and El Ghouli et al. (2019), among others, examine the effects of country-level characteristics on CSR engagement worldwide, only a small proportion of their samples come from emerging markets.⁴ Our study uses a large sample—over 4,000 observations from countries located in diverse regions. Our paper focuses solely on emerging countries and thus allows us to have a better understanding of the determinants of CSR engagement by firms located in countries where capital markets, regulatory systems, and contract enforcement mechanisms are weak or absent (Khanna and Palepu, 1997).

The rest of this paper proceeds as follows. In the next section, we develop our testable hypothesis. We describe the research design in Section 3 and summarize the empirical results in

⁴ For instance, in Cai et al.'s (2016) study, observations from emerging countries represent less than 6% of the total sample (390 observations out of 6,739). Moreover, their total number of observations per emerging country is very small, ranging between a total of nine observations in Turkey and a total of 55 observations in South Korea. Furthermore, Ioannou and Serafeim (2012) use an international sample of 12,710 observations over the period 2002 to 2008, from which only 353 observations relate to emerging countries, thus representing less than 3% of the entire sample. Finally, El Ghouli et al. (2019) use a sample of 25,193 over the period 2003 to 2012, from which 2,521 observations are from emerging countries, thus representing approximately 10% of the sample.

Section 4. Sections 5 and 6 provide robustness checks and additional analysis, respectively. Finally, Section 7 presents the conclusions we draw from the study.

2. Hypothesis Development

2.1. What is empathy?

The term “empathy” is an adaptation of the German word “Einfühlung” (Baron-Cohen and Wheelwright, 2004), and it was coined by Titchener in 1909. Empathy has many different definitions. For instance, Mehrabian and Epstein (1972) define empathy as “the heightened responsiveness to another’s emotional experience” (p. 526), whereas Decety and Lamm (2006) define empathy as “the ability to experience and understand what others feel without confusion between oneself and others” (p. 1146).

Research in psychology refers to two types of empathy: *dispositional empathy* and *situational empathy*. Dispositional empathy (also called trait empathy) is the tendency for people to imagine and experience the feelings and experiences of others. Research on dispositional empathy assumes that empathy is a stable trait. Situational empathy (also called induced empathy) is an immediate response to a specific stimulating situation. Research on situational or induced empathy typically manipulates empathy through asking participants to take the perspective of a target person in distress. Whereas research on dispositional empathy follows the personality psychology tradition, research on situational empathy follows the social psychology tradition.

Dispositional empathy is divided into cognitive and affective or emotional components (Davis, 1994). The cognitive component refers to the understanding of another person’s viewpoint and feelings (Kohler, 1929). It is the ability to deduce what others think (Eisenberg, 2007) and to be aware of others’ feelings (Schieman and Van Gundy, 2000). The affective component refers to joining and sharing the emotional responses of another person (e.g.,

Batson, 1991). People who have affective empathy feel others' problems as if they were their own (Cooley and Schubert, 1998). These two components are considered to be interrelated and not separate (Davis, 1983).

Personality psychology assumes that empathy is a stable trait and thus can be assessed through self-report measures. The IRI is a commonly used measure of empathy. It includes a cognitive other-focused (perspective taking) scale and an affective other-focused (empathic concern) scale. The perspective taking (PT) scale estimates a person's inclination to automatically adopt others' psychological perspectives (Davis, 1983). The empathic concern (EC) scale estimates a person's inclinations to adopt feelings of sympathy, compassion, and concern for others (David, 1983).

2.2. Empathy and prosocial behavior

Prosocial behavior is defined as voluntary behavior intended to benefit another (Eisenberg, 1986). It includes different kinds of behaviors, such as helping, sharing, and comforting, as well as behaviors enacted for diverse reasons.⁵ Altruistic behaviors—a subtype of prosocial behavior—are often defined as prosocial behaviors that are motivated by other-oriented or moral concerns/emotions rather than by egoistic or pragmatic concerns (Eisenberg, 1986). Prior research suggests that empathy triggers prosocial behavior (Eisenberg and Miller, 1987) and altruistic behavior (De Waal, 2008).

People who are especially empathic volunteer more, donate more to charity, and are more likely to help others in need (Underwood and Moore, 1982; Davis, 1983; Eisenberg and Miller, 1987; Borman et al., 2001; Grühn et al., 2008; Konrath et al., 2016). Both affective empathy and

⁵ Eisenberg (2010) explains that prosocial behavior can be motivated by several factors, including practical concerns, other-oriented concerns, egoistic concerns, and moral values.

cognitive empathy are positively associated with prosocial behavior. For instance, Davis (1983) and Batson (1998) show that empathic concern (affective empathy) is positively associated with higher levels of self-reported charitable giving and greater self-reported concern for the welfare of others, respectively. Perspective taking is negatively associated with egocentric behavior (Piaget, 1932). Thus, the higher people's perspective-taking skills are, the better their social functioning and self-esteem will be (Davis, 1983). Carlo et al. (1999) find that trait perspective taking (cognitive empathy) is positively associated with frequency of volunteering and self-reported prosocial tendencies.⁶ Davis et al. (2003) show that empathic concern and perspective taking are both associated with more altruistic motives for volunteering.

More recently, Chopik et al. (2017) examine how country-level empathy is related to country-level prosociality, proxied by charitable giving, volunteerism, and helping. They find that volunteerism and helping are positively associated with empathic concern, perspective taking, and total empathy, whereas charitable giving is unrelated to any of the empathy scales.⁷

2.3. Empathy and pro-environmental behavior

Pro-environmental behaviors are behaviors that help to conserve natural resources, protect the natural environment, or reverse past environmental damage. Stern and Dietz (1994) argue that environmental concern is related to egoistic, social-altruistic, and biospheric value orientations and also to beliefs about the consequences of environmental changes for valued objects. They explain that people will commit themselves to action when pro-environmental

⁶ Perspective taking is also negatively associated with aggressive behavior (Giancola, 2003) and criminal acts (Jolliffe and Farrington, 2004).

⁷ The authors note that "there is a considerable variability in how countries demonstrate prosocial behavior. Each country has its own unique way of acting prosocially. For example, in Liberia, only 8% of the population reported giving to a charity in the last month, one of the lowest percentages in the world. However, 76% of the population reported helping a stranger in the last month, one of the highest percentages in the world. In this example, prosocial behavior is indeed high in Liberia, but is not necessarily reflected in their charitable giving behavior" (p. 32).

personal norms are activated by beliefs that an environmental condition has adverse consequences. In the egoistic value orientation, the adverse consequences are for oneself and close kin. In the social-altruistic orientation, the adverse consequences are for other human beings. Finally, in the biospheric orientation, the adverse consequences are for other species or ecological systems.

Past studies show that empathy with humans predicts a person's concern for nature. For instance, Schultz's (2000) findings suggest that induced perspective taking is positively associated with increases in biospheric environmental concerns. Schultz (2001) shows a positive correlation between the perspective taking and empathic concern subscales of the IRI and both biospheric and altruistic environmental concerns. Berenguer (2007) finds that compared with individuals not induced to feel empathy, those induced to do so recommend allocating more funds to an environmental protection association and show stronger empathetic feelings and attitudes toward the natural object and nature as a whole. In his 2010 study, Berenguer documents that participants with a high empathy level provided more arguments of moral reasoning about the environment (number of moral reasons given for pro-environmental behaviors) than participants with a low empathy level. He observed that the type of arguments provided by the participants depended on the object of empathy: When the object was a vulture, the number of moral arguments of an ecocentric nature⁸ increased, but when the object was a young man, the number of moral arguments of an anthropocentric nature⁹ increased.

Overall, the evidence summarized in the above two sections (sections 2.2. and 2.3) shows that empathy at the individual level is positively associated with prosocial and pro-

⁸ The moral consideration of nature from the ecocentric perspective would be related to its intrinsic value, independent of its usefulness to humans.

⁹ Anthropocentric motives are based on the idea that nature should be protected because of its value in maintaining or enhancing quality of life for human beings.

environmental behavior. Eisenberg et al. (2010, p. 144) argue that “empathy is of relevance to policies that depend on good- rather than ill-will toward others and humanitarian motivation. Such policies would include not only those related to the provision of concrete aid to needy individuals, but also to the support of policies pertaining to taxation, education, health, and so forth that affect the well-being of other people.”

If the positive effects of individuals’ empathy on prosocial and pro-environmental behavior translate from the individual level to the firm level, then we would expect a positive association between empathy and CSR engagement. Thus, our hypothesis is as follows:

Hypothesis: Firms located in countries with higher levels of empathy have higher CSR scores.

It is noteworthy that while the identity of who is making the CSR decision could influence the nature of the relation between empathy and CSR performance, we do not introduce this factor in our analysis, and this is for the following reasons: (1) CSR literature shows that different types of stakeholders and their characteristics tend to influence a firm’s CSR decision (e.g., CEOs, CEO’s gender, board size, board composition, large shareholders, shareholders’ investment horizon, local shareholders); (2) The identity of the main driver(s) behind CSR decision could vary from one country/context to another; (3) Our conceptual framework and the nature of our variable of interest (i.e., empathy), make it very challenging to examine the moderating effect of the identity of who is making the CSR decision on the effect of empathy on CSR performance; and (4) Our paper seeks to introduce empathy as a new country-level determinant of CSR decision, and this after controlling for other (firm and county-level) factors identified in the extant literature. As stated above, empathy is a country-level measure built by aggregating individual-based results collected by survey as explained in Chopik et al. (2017).

However, all this said, we make the general assumption that a firm decision to engage in CSR reflects equilibrium of the supply side and the demand-side in a particular country.

3. Research Design

To test our hypothesis, we regress firm CSR scores on country-level empathy. We gather information on firms' CSR practices from the Thomson Reuters ASSET4 ESG database. The ASSET4 ESG framework allows one to rate and compare companies against approximately 700 individual data points, which are combined into more than 250 key performance indicators (KPIs). These KPI scores are aggregated into a framework of 18 categories grouped within four pillars (social performance, environmental performance, corporate governance performance, and economic performance). In the current study, we focus on the social performance and environmental performance pillars. These pillars are calculated by equally weighting and z-scoring all underlying data points and comparing them against all companies in the ASSET4 universe. The resulting percentage is, therefore, a relative measure of performance, z-scored and normalized to better distinguish values and position the score between 0 and 100 percent.

The broad categories of environmental performance are 1) *emission reduction*, 2) *product innovation*, and 3) *resource reduction*. They reflect a company's capacity to reduce (i) the use of materials, energy, or water, and to find more eco-efficient solutions by improving supply chain management (resource reduction), (ii) air emissions, waste, hazardous waste, water discharges, spills, or their impacts on biodiversity and to partner with environmental organizations to reduce the environmental impact of the company in the local or broader community (emission reduction), and (iii) the environmental costs and burdens for its customers, thereby creating new market opportunities through new environmental technologies and processes or eco-designed, dematerialized products with extended durability (product innovation).

The broad categories of social performance are 1) *community*, 2) *diversity of opportunity*, 3) *employment quality*, 4) *health and safety*, 5) *human rights*, 6) *product responsibility*, and 7) *training and development*. They reflect a company's capacity to increase its workforce loyalty and productivity (employment quality, health and safety, training and development, diversity of opportunity) and to maintain its license to operate (i) by guaranteeing freedom of association and excluding child, forced or compulsory labor (human rights); (ii) by being a good citizen, protecting public health, and respecting business ethics (community); and (iii) by producing high-quality goods and services that integrate the customer's health and safety and by preserving its integrity and privacy through accurate product information and labeling (customer/product responsibility). The overall CSR score is the average of the environmental and social pillar scores (e.g., Ioannou and Serafeim, 2012; Luo et al., 2015).

We use the empathy measures that Chopik et al. (2017) derived through an online survey. Those authors asked participants to complete the empathic concern and perspective taking subscales of the IRI (Davis, 1983).¹⁰ The empathic concern subscale reflects a person's other-oriented feelings of compassion for others.¹¹ The perspective taking subscale reflects a person's tendency to imagine others' points of view.¹² Participants were asked to rate the extent to which they agreed with each item on a scale ranging from 1 (does not describe me well) to 5 (describes me very well), and the items were averaged to create subscales for empathic concern and

¹⁰ The IRI is a commonly used measure of empathy. It includes the cognitive other-focused (perspective taking) scale and the affective other-focused (empathic concern) scale. The perspective taking (PT) scale items and the empathic concern (EC) scale items are available in Appendix A.

¹¹ It represents an emotional component of empathy (e.g., "I often have tender, concerned feelings for people less fortunate than me").

¹² It represents a cognitive or intellectual component of empathy (e.g., "I sometimes try to understand my friends better by imagining how things look from their perspective").

perspective taking. Because the two subscales were correlated, the authors also computed a simplified composite scale of total empathy.

We test our hypothesis by regressing CSR scores on empathy while controlling for a set of country- and firm-level control variables. First, we control for culture. Following Ioannou and Serafeim (2012), we characterize the cultural system using two dimensions: (i) Power Distance Index and (ii) Individualism.¹³ Ioannou and Serafeim (2012) and Griffin et al. (2018) find that corporations in countries that are characterized by higher levels of individualism have higher CSR scores. Moreover, Ioannou and Serafeim (2012) find that power distance is associated with higher CSR scores, while Cai et al. (2016) find the opposite. Second, we control for legal origin. Liang and Renneboog (2017) find that firms from common-law countries have lower CSR scores than companies from civil-law countries, with Scandinavian civil-law firms having the highest CSR ratings. We classify the legal traditions of our sample countries into two categories: civil-law countries and common-law countries. Third, we control for a country's level of economic development. Cai et al. (2016) argue that stages of economic development play an important role in explaining variations in country CSR. They find a positive association between countries' CSR ratings and their stages of economic development. We control for a country's level of economic development using (the logarithm of) GDP per capita ($\ln(\text{GDP per capita})$). We collect gross domestic product (GDP) per capita in USD from World Development Indicators. Fourth, El Ghouli et al. (2019) find that firms located in countries in which the media has

¹³ Power distance expresses the degree to which the less powerful members of a society accept and expect that power is distributed unequally. The fundamental issue here is how a society handles inequalities among people. People in societies exhibiting a large degree of power distance accept a hierarchical order in which everybody has a place and which needs no further justification. In societies with low power distance, people strive to equalize the distribution of power and demand justification for inequalities of power. Individualism can be defined as a preference for a loosely knit social framework in which individuals are expected to take care of only themselves and their immediate families. Its opposite, collectivism, represents a preference for a tightly knit framework in society in which individuals can expect their relatives or members of a particular ingroup to look after them in exchange for unquestioning loyalty. A society's position on this dimension is reflected in whether people's self-image is defined in terms of "I" or "we."

relatively more freedom engage in more CSR activities than firms in countries with media restrictions. We control for press freedom using data from Freedom House. Fifth, we control for the revised Anti-Director Rights Index as a proxy for investor protection against corporate management. Finally, we control for the level of corruption at the country level. The measure is obtained from an executive survey based on an index ranging from 0 to 10, where higher values indicate greater control of corruption.

For firm-level control variables, we use firm size, firm performance, leverage, market to book value, cash, sales growth, research and development, corporate governance, and ownership. Firm size is proxied by (the logarithm of) total assets of the company. Firm performance is proxied by return on assets (ROA), where ROA is the ratio of earnings before interest and taxes to total assets. Leverage is the ratio of total debt to total assets. Market to book value is the ratio of market value to book value as reported in the Wordscope database. Cash is the ratio of total cash to assets. Sales growth is the percentage change in sales from prior year. Research and development is the ratio of research and development expenses to total sales. Missing research and development expenses are set to zero. Corporate governance is proxied by the score available in Asset4 (measured in logarithm). We proxy for ownership using “free-float” variables (Free float employee/family held; free float government held; free float investment company held; free float pension fund held; and free float foreign holdings).¹⁴ We winsorize all continuous variables at the 1st and 99th percentiles. Finally, we control for industry fixed effects using the Fama French 48 industry classification and include year fixed effects. We cluster the standard errors at the country level in all estimations.

¹⁴ Details about country- and firm-level control variables are provided in Appendix D.

We restrict our sample to the time period starting from 2010 because Thomson Reuters ASSET4 ESG coverage of emerging markets was very limited before that date, with the number of observations ranging between 5 (in the years 2002 and 2003) and 322 (in the year 2009). The number of CSR rating observations almost doubled in 2010, with a total of 606 observations across all emerging countries.¹⁵ For the period after 2009, the database covers a total of 18 emerging countries, but three countries, Peru, the Czech Republic, and Hungary, each have fewer than 30 observations. Thus, we exclude these countries from our analysis. Our final sample is composed of 4,086 firm-year observations from 15 different emerging countries over the period 2010 to 2016. Our sample includes 780 unique firms.

Table 1 illustrates our sample's composition by country and by year. Distribution by year shows a smooth distribution. Among the 15 emerging countries we examine, South Africa and South Korea have relatively high coverage, with 16.20% and 13.58% of the observations, respectively. We account for the sample-concentration issue in the robustness checks section by excluding the dominating countries. Our sample is geographically well diversified, with European, American, African, and Asian countries. Our sample countries also vary in terms of the origin of their legal systems, with four common-law countries (India, Malaysia, South Africa, and Thailand), three German civil-law countries (China, South Korea, and Poland), and eight French civil-law countries (Brazil, Chile, Colombia, Indonesia, Mexico, the Philippines, Russia, and Turkey). Hence, our sample provides a broad coverage that allows us to comprehensively capture cross-country differences.

[INSERT TABLE 1 HERE]

¹⁵ Thomson Reuters ESG Scores expanded coverage to MSCI emerging markets in 2011.

4. Empirical Results

4.1 Descriptive statistics

Panel A of Table 2 shows how averaged empathy measures and cultural indices vary across countries. It shows that South Korea, Malaysia, and Thailand have the highest empathic concern scores, while Poland, Russia, and South Africa have the lowest empathic concern scores. Countries with the highest perspective taking scores are South Korea, Philippines, Mexico, and Indonesia, while those with the lowest perspective taking scores are Poland, Brazil, and India.

[INSERT TABLE 2 HERE]

Hofstede et al. (2010) suggest that country-level differences in societal values can be characterized by six dimensions: (1) *individualism/collectivism* refers to the degree to which people prefer loosely knit social networks and individuality (higher values) versus tightly knit social networks and interdependence with others (lower values); (2) *power distance* measures the degree to which a culture is accepting of inequality (higher values); (3) *masculinity/femininity* assesses the degree to which a culture can be characterized by assertiveness and competitiveness (masculinity; higher values) or by nurturance and cooperation (femininity; lower scores); (4) *uncertainty avoidance* measures the degree to which a country's citizens are uncomfortable with uncertainty and ambiguity; (5) *long-term orientation* assesses the outlook of a culture (countries with a long-term orientation place more importance on the future); (6) *indulgence versus restraint* describes hedonistic behavior (how freely people can satisfy their basic needs and desires, how strictly social norms are followed, and how strongly gratification is suppressed and regulated).

We compute the correlation coefficients between the six cultural Hofstede indices and the three measures of empathy discussed above to investigate whether the empathy metrics and the cultural Hofstede indices capture different constructs. The correlation coefficients are reported in Panel B of Table 2 and show low levels of correlation between the cultural variables and the empathy measures except for individualism/collectivism, for which we find negative correlations ranging between -0.7391 and -0.6618. This is consistent with Mann and Cheng's (2013) observation that collectivistic values might facilitate intellectual and emotional empathy. Given the high correlation between empathy and collectivism, we control for individualism/collectivism in all our regressions.

Table 3 presents descriptive statistics of the dependent, independent, and control variables. Panel A shows the statistical distribution of overall CSR scores as well as that of the two Asset4 pillars: environmental performance and social performance. We also present the statistical distribution of the three categories of environmental performance: (1) resources use, (2) emissions reduction, and (3) product innovation, as well as the statistical distribution of the seven categories of social performance: (1) employment quality, (2) health and safety, (3) training and development, (4) diversity, (5) human rights, (6) community, and (7) customer/product responsibility. We report the mean and median scores, as well as the 5th and 95th percentiles and the standard deviations, for the entire sample. We find that ASSET4 standardized social and environmental performance z-scores have mean (median) values of 3.76 (4.11) and 3.71 (3.96), respectively. Unreported statistics show that although the environmental score is not different for emerging and non-emerging markets, the social score is significantly higher in emerging markets than it is in non-emerging markets, with an average social score of just 49.79 in non-emerging markets.

Panel B of Table 3 presents descriptive statistics for the variables of interest: total empathy, perspective taking, and empathic concern. The average value is 3.55 for total empathy, 3.54 for perspective taking, and 3.56 for empathic concern.

Panel C of Table 3 reports descriptive statistics for the control variables. They indicate that 62% of our firms are located in civil-law countries. The average value of the Freedom of the Press index is -48.716, while the average values of control for corruption and revised Anti-Director Rights Index are 2.51 and 4, respectively. The average (median) firm in our sample has debt that is 22.6% (19.6%) of total assets, cash that is 5.4% (3.1%) of total assets, an ROA of 9.4% (8.1%), and annual sales growth of 17% (12%).

[INSERT TABLE 3 HERE]

Table 4 shows the correlations between country-level explanatory variables. The correlation coefficients are reasonably low, indicating that multicollinearity is not likely to affect our regression results.¹⁶

[INSERT TABLE 4 HERE]

4.2 Regression analysis

Table 5 presents the results of the main regression. In columns (1), (2), and (3), we regress the total CSR score, the social score, and the environmental score on total empathy and add all our country and firm level control variables. Across the three columns, we find that the variable of interest, total empathy, loads positively and is statistically significant. In terms of economic significance, our results indicate that an increase in empathy level by one standard deviation

¹⁶ Except the correlation between empathy and individualism. We run the VIF test after the regression. The test statistics suggest that there are no multicollinearity issues.

(0.111) would increase CSR score by 9.8%. Our results still hold if we break down CSR into a social component and an environmental component. The same increase in empathy would imply an increase of 8.7% in social CSR and 11.3% in environmental CSR. As for the control variables, we find, consistent with Cai et al. (2016), that power distance is negatively associated with CSR levels. Our results also indicate that individualism is not significantly associated with CSR. This finding is consistent with the findings of Ringov and Zollo (2007), Park et al. (2007), and Gallego-Álvarez and Ortas (2017), among others. Similar to Liang and Renneboog (2017) we show that firms from civil-law countries have higher CSR scores than companies from common-law countries. Like Griffin et al. (2018), we find that firms located in countries with stronger investor protection against corporate management enjoy higher CSR scores.

Regarding firm characteristics, consistent with El Ghouli et al. (2016), we find that larger firms and those with higher performance enjoy higher CSR scores. We also find that market to book value is associated with more CSR engagement. Similar to El Ghouli et al. (2019), we document better CSR scores for well-governed firms. Moreover, we show that firms with higher foreign holdings have higher CSR performance.

[INSERT TABLE 5 HERE]

Furthermore, we investigate the empathy-CSR relationship using the seven components of social performance (employment quality, health and safety, training and development, diversity, human rights, community, and customer/product responsibility) as well as the three components of environmental performance (resource use, emission reduction, and product innovation). The results reported in Table 6 show that our findings hold for all three components of environmental performance. These results suggest that firms located in countries

with higher empathy levels (1) strive to reduce air emissions, waste, water discharges, and spills or their impacts on biodiversity and are more likely to partner with environmental organizations to reduce the environmental impact of the company in the local or broader community, (2) commit more to achieving an efficient use of natural resources in the production process and are more likely to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management, and (3) commit more to supporting the research and development of eco-efficient products or services and are more likely to use new environmental technologies and processes or eco-designed, dematerialized products with extended durability.

Regarding the components of the social score, we find positive coefficients only for workforce diversity and community. The positive effect of empathy on the workforce-diversity category suggests that firms located in countries with higher empathy promote an effective life-work balance, a family-friendly environment, and equal opportunities regardless of gender, age, ethnicity, religion or sexual orientation. The positive effect of empathy on the society/community category suggests that firms located in countries with more empathy act as good citizens (donations of cash, goods or staff time, etc.), protect public health (avoidance of industrial accidents, etc.), and respect business ethics (avoiding bribery and corruption, etc.).

[INSERT TABLE 6 HERE]

5. Robustness Checks

In this section, we examine whether our findings are robust to using alternative measures of empathy and to excluding countries with a large number of observations.

5.1. Alternative measures of empathy

Total empathy is a simplified composite scale of the empathic concern and perspective taking subscales. As a robustness check, we rerun our regressions using each of these two subscales to examine whether our results hold. The results reported in Table 7 show that empathic concern, an emotional component of empathy, loads positively and is statistically significant when overall CSR performance, environmental performance, and social performance are used as dependent variables. The results reported in Table 8 show that perspective taking, a cognitive or intellectual component of empathy, provides similar results. These findings confirm our inferences from the main analysis.

[INSERT TABLE 7 HERE]

[INSERT TABLE 8 HERE]

5.2 Subsample analysis

As illustrated in Table 1, South Africa, Korea, and India together represent over 42% of the sample. To check whether our results are driven by one of these countries, we estimate our main models using the entire sample, after excluding each of these three countries in turn. The results are reported in Table 9. In panels A, B, and C, we exclude South Africa, Korea, and India, respectively. Across all panels, we report the regression results using total empathy in the first column. In the second column, we report the results using the empathic concern subscale, and in the third column, we list the results using the perspective taking subscale. Despite the smaller number of observations, we find that empathy loads positively and significantly, thereby showing that our results are not driven by one of these three countries.

[INSERT TABLE 9 HERE]

6. Additional Analysis

The 2004 Indian Ocean earthquake and tsunami led to a surge in corporate donations (Liang and Renneboog, 2017). We use this event as a quasi-natural experiment and compare donations made by companies located in countries with high empathy to those made by firms located in countries with low empathy, during the year of the disaster and the following year. We calculate corporate donations as total donations divided by total sales, and we use a random-effect Tobit model to run our regressions. Our sample includes all countries covered by Asset4, not just emerging countries.¹⁷ Table 10 presents the results. The first two columns show that firms located in countries with higher empathy donated more in the years 2004 and 2005. We also conduct a placebo test on alternative event years. The results reported in column 3 and subsequent columns show that the interactions between empathy and years not affected by the disaster (i.e., years other than 2004 and 2005) are not statistically significant, in contrast to the interactions between empathy and the years 2004 and 2005. Thus, we conclude that the difference in donations between firms located in countries with high empathy and those located in countries with low empathy is likely to be driven by the earthquake disaster event. These results confirm our findings that firms located in countries with higher empathy levels engage more in CSR activities.

[INSERT TABLE 10 HERE]

7. Conclusions

On the basis of psychology research suggesting that empathy is positively associated with prosocial and pro-environmental behaviors, we examine whether cross-country differences in trait empathy can explain variations in firms' CSR performance. Using a sample of 4,086 firm-

¹⁷ We do not restrict our sample to emerging countries because of the low number of observations with donations data.

year observations from 15 emerging countries over the period from 2010 to 2016, our results indicate that firms located in countries with higher empathy have higher overall CSR performance, environmental performance, and social performance. Our results hold when we use total empathy as well as its two components: empathic concern and perspective taking. Our results are further supported by a quasi-natural experiment based on the 2004 Indian Ocean earthquake. We find that during the year of the disaster and the following year, firms in countries with higher empathy on average donated more money than firms in countries with less empathy.

As stated in the body of the paper, and similar to most cross-country studies, our analyses do not take into account the identity of who is making the CSR decision. Because it could influence the nature of the relation between empathy and CSR score, future work could extend our study by examining the moderating effect of the main driver(s) of a company's CSR decision, and whether the effect could change from one country/context to another. Such analyses would be even more interesting if empathy data at firm level are developed or made available.

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Table 1. Sample distribution by country of origin and by year

Country	Number	Percentage	Year	Number	Percentage
Brazil	500	12.24%	2010	452	11.06%
Chile	122	2.99%	2011	518	12.68%
China	450	11.01%	2012	610	14.93%
Colombia	46	1.13%	2013	646	15.81%
India	521	12.75%	2014	688	16.84%
Indonesia	182	4.45%	2015	720	17.62%
Korea (South)	555	13.58%	2016	452	11.06%
Malaysia	250	6.12%			
Mexico	152	3.72%			
Philippines	110	2.69%			
Poland	115	2.81%			
Russian Federation	178	4.36%			
South Africa	662	16.20%			
Thailand	127	3.11%			
Turkey	116	2.84%			
Total	4,086	100.00%	Total	4,086	100.00%

This table presents the sample distribution by country of origin and year. The sample comprises 4,086 observations from 15 countries over the period 2010 to 2016.

Table 2. Empathy measures and the Hofstede cultural indices

Panel A. Averages of the empathy measures and the Hofstede cultural indices

Country	EC	PT	TE	pdi	idv	mas	uai	Itowvs	ivr
Brazil	3.46	3.43	3.44	69	38	49	76	43.82	59.15
Chile	3.61	3.61	3.61	63	23	28	86	30.98	68
China	3.55	3.54	3.54	80	20	66	30	87.40	23.66
Colombia	3.46	3.54	3.5	67	13	64	80	13.09	83.03
India	3.62	3.45	3.53	77	48	56	40	50.88	26.11
Indonesia	3.61	3.63	3.62	78	14	46	48	61.96	37.72
Korea (South)	3.76	3.73	3.74	60	18	39	85	100	29.46
Malaysia	3.72	3.59	3.66	100	26	50	36	40.80	57.14
Mexico	3.67	3.63	3.65	81	30	69	82	24.18	97.32
Philippines	3.67	3.63	3.65	94	32	64	44	27.45	41.96
Poland	3.29	3.35	3.32	68	60	64	93	37.78	29.24
Russian Federation	3.34	3.54	3.44	93	39	36	95	81.36	19.86
South Africa	3.42	3.46	3.44	49	65	63	49	34	63
Thailand	3.68	3.55	3.61	64	20	34	64	31.73	45.08
Turkey	3.63	3.59	3.61	66	37	45	85	45.59	49.10

Panel B. Correlations between the empathy scores and the Hofstede cultural indices

	TE	EC	PT	pdi	idv	mas	uai	ltowvs	ivr
TE	1.0000								
EC	0.9556 0.0000	1.0000							
PT	0.9298 0.0000	0.7813 0.0000	1.0000						
pdi	0.1964 0.0000	0.2288 0.0000	0.1143 0.0000	1.0000					
idv	-0.7312 0.0000	-0.6618 0.0000	-0.7391 0.0000	-0.4163 0.0000	1.0000				
mas	-0.4251 0.0000	-0.3608 0.0000	-0.4597 0.0000	0.0213 0.1312	0.4276 0.0000	1.0000			
uai	0.0640 0.0000	-0.0730 0.0000	0.2365 0.0000	-0.2578 0.0000	-0.0990 0.0000	-0.5636 0.0000	1.0000		
ltowvs	0.4306 0.0000	0.3334 0.0000	0.5306 0.0000	0.0681 0.0000	-0.5283 0.0000	-0.2974 0.0000	0.0750 0.0000	1.0000	
ivr	-0.1180	-0.1306	-0.1144	-0.2387	0.2393	0.1874	0.1620	-0.7361	1.0000

0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

Panel A presents averages of the empathy scales (empathic concern (EC), perspective taking (PT), and total empathy (TE)) and the Hofstede cultural indices (power distance (pdi), individualism/collectivism (idv), masculinity/femininity (mas), uncertainty avoidance (uai), long-term orientation (ltowvs), indulgence(ivr)) for each country. Panel B presents the correlations between the empathy scores and the Hofstede cultural indices.

Table 3. Descriptive statistics: Summary statistics for the regression variables

Panel A. Dependent variables					
Variable	Mean	sd	p5	p50	p95
CSR score	3.775	0.726	2.335	4.058	4.522
Social score	3.769	0.844	2.006	4.118	4.547
Environmental score	3.716	0.732	2.359	3.961	4.528
Customer product responsibility	3.747	0.856	1.953	4.077	4.554
Resource reduction	3.726	0.787	2.221	4.063	4.508
Product innovation	3.619	0.639	2.859	3.510	4.555
Emission reduction	3.740	0.743	2.438	4.004	4.532
Workforce diversity	3.446	0.862	2.125	3.591	4.538
Workforce employment	3.757	0.883	1.841	4.151	4.554
Workforce health and safety	3.789	0.769	2.389	4.046	4.571
Workforce training	3.898	0.794	2.015	4.277	4.524
Community	3.802	0.827	1.985	4.150	4.545
Human rights	3.723	0.664	2.852	3.920	4.550
Panel B. Independent variables					
Variable	Mean	Sd	p5	p50	p95
EC	3.567	0.133	3.340	3.610	3.760
PT	3.540	0.104	3.430	3.540	3.730
TE	3.551	0.111	3.440	3.540	3.740
Panel C. Control variables					
Variable	Mean	Sd	p5	p50	p95
idv	36.019	17.071	14.000	37.000	65.000
pdi	70.846	14.399	49.000	69.000	100.000
civil_law	0.620	0.486	0.000	1.000	1.000
ln_GDP	2.015	0.820	0.380	2.088	3.300
FOP_FH	-48.716	18.432	-85.000	-43.000	-30.000
Revised anti director index	4.077	1.295	1.000	4.500	5.000
Corruption	2.514	0.551	1.500	2.500	3.000
Firm size	8.450	1.364	6.205	8.470	10.707
ROA	0.094	0.092	-0.018	0.081	0.262
Leverage	0.226	0.184	0.002	0.196	0.553
MTBV	2.929	3.340	0.580	1.880	9.100
Cash to assets	0.054	0.067	0.002	0.031	0.178
Sales growth	17.463	37.779	-17.669	11.971	62.212
RD to sales	0.004	0.014	0.000	0.000	0.023
Ln_Governance score	3.069	1.045	0.936	3.260	4.390
Free float employee/family held	4.730	12.863	0.000	0.000	38.000
Free float government held	3.755	12.585	0.000	0.000	47.000
Free float investment company held	4.672	8.371	0.000	0.000	23.000
Free float pension fund held	0.866	2.501	0.000	0.000	8.000
Free float foreign holdings	7.205	16.223	0.000	0.000	51.000

This table presents summary statistics for the regression variables. Panels A, B and C are for the dependent, independent, and control variables, respectively.

Table 4. Correlation matrix: Correlations between independent variables

	TE	EC	PT	idv	pdi	civil_law	ln_GDP	FOP_FH	ADR index	Corruption
TE	1.0000									
EC	0.9543 0.0000	1.0000								
PT	0.9270 0.0000	0.7738 0.0000	1.0000							
idv	-0.7258 0.0000	-0.6521 0.0000	-0.7369 0.0000	1.0000						
pdi	0.1639 0.0000	0.1856 0.0000	0.0984 0.0000	-0.3955 0.0000	1.0000					
civil_law	0.1767 0.0000	0.0148 0.2667	0.3792 0.0000	-0.5695 0.0000	0.1481 0.0000	1.0000				
ln_GDP	0.2522 0.0000	0.0712 0.0000	0.4493 0.0000	-0.2906 0.0000	-0.2454 0.0000	0.5054 0.0000	1.0000			
FOP_FH	-0.0253 0.0728	0.0185 0.1891	-0.0761 0.0000	0.4336 0.0000	-0.6190 0.0000	-0.2237 0.0000	0.0455 0.0012	1.0000		
ADR index	0.0166 0.2120	0.0851 0.0000	-0.0833 0.0000	0.3809 0.0000	-0.2513 0.0000	-0.5102 0.0000	-0.0483 0.0003	0.6351 0.0000	1.0000	
Corruption	0.2177 0.0000	0.1887 0.0000	0.2214 0.0000	-0.0704 0.0000	-0.3636 0.0000	0.0940 0.0000	0.2697 0.0000	0.6318 0.0000	0.2411 0.0000	1.0000

This table presents correlations between country level independent variables. TE, PT, and EC are total empathy, perspective taking, and empathic concern.

Table 5. Effect of total empathy on overall CSR score, social score, and environmental score

Variable	CSR score	Social score	Environmental score
TE	0.883*** (3.12)	0.792** (2.50)	1.018*** (3.16)
idv	0.001 (0.29)	0.000 (0.01)	0.001 (0.45)
pdi	-0.009*** (-5.26)	-0.010*** (-5.88)	-0.007*** (-3.63)
civil_law	0.299*** (3.54)	0.394*** (4.06)	0.226** (2.60)
ln_GDP	-0.052 (-1.70)	-0.088** (-2.39)	-0.016 (-0.52)
FOP_FH	0.004* (2.03)	0.003 (1.20)	0.006** (2.78)
ADR index	0.155*** (9.26)	0.208*** (9.59)	0.113*** (7.40)
Corruption	-0.049 (-1.26)	-0.043 (-0.82)	-0.056 (-1.70)
Firm size	0.152*** (11.00)	0.133*** (7.50)	0.189*** (12.06)
ROA	0.529*** (5.57)	0.549*** (4.17)	0.486*** (5.43)
Leverage	-0.061 (-0.58)	-0.084 (-0.78)	-0.098 (-0.74)
MTBV	0.013*** (3.33)	0.015*** (3.65)	0.014*** (3.04)
Cash to assets	-0.212 (-0.86)	-0.174 (-0.57)	-0.241 (-1.03)
Sales growth	-0.001*** (-3.64)	-0.001*** (-3.31)	-0.001*** (-3.81)
RD to sales	-0.908	-1.297	-0.759

	(-0.75)	(-1.38)	(-0.42)
Ln Governance score	0.419*** (11.12)	0.502*** (10.23)	0.362*** (10.62)
Free float employee/family held	-0.001 (-0.68)	-0.001 (-0.93)	-0.001 (-0.68)
Free float government held	0.002* (2.12)	0.003** (2.47)	0.001 (1.17)
Free float investment company held	-0.004* (-1.94)	-0.005** (-2.46)	-0.003 (-1.35)
Free float pension fund held	0.002 (0.44)	0.002 (0.21)	0.002 (0.35)
Free float foreign holdings	0.002*** (3.07)	0.002** (2.48)	0.003*** (3.31)
Constant	-1.769 (-1.51)	-1.684 (-1.25)	-2.306 (-1.75)
Observations	4,086	4,086	4,086
R-squared	0.594	0.571	0.551
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

This table presents the results from regressions of CSR, as well as its two components, on total empathy (TE). The CSR score is the average of the environmental score and the social score reported in the Asset4 database. The dependent variables are measured in natural logarithms. All variables are defined in the Appendices. Z-statistics are based on robust standard errors adjusted for clustering by country and are reported in parentheses. The sample comprises 4,086 observations representing 780 unique firms from 15 countries over the period 2010 to 2016.

Table 6. Effects of empathy on CSR subcategories

Panel A.

Variable	Customer product responsibility	Resource reduction	Product innovation	Emission reduction	Workforce diversity
TE	0.764 (1.14)	1.036** (2.79)	0.733* (2.06)	1.152*** (3.69)	1.169** (2.41)
idv	-0.001 (-0.23)	0.003 (0.88)	-0.002 (-0.76)	0.002 (0.83)	0.003 (0.66)
pdi	-0.002 (-0.58)	-0.008*** (-3.95)	-0.006*** (-3.58)	-0.004* (-1.93)	-0.014*** (-6.83)
civil_law	0.187 (1.33)	0.259** (2.50)	0.132 (1.75)	0.225** (2.64)	0.353*** (3.43)
ln_GDP	-0.003 (-0.06)	-0.071* (-2.12)	-0.015 (-0.45)	0.032 (1.01)	0.013 (0.36)
FOP_FH	0.007 (1.59)	0.004* (1.96)	0.005** (2.42)	0.009*** (3.51)	0.004 (1.16)
ADR index	0.066** (2.36)	0.139*** (8.47)	0.067*** (5.20)	0.088*** (4.44)	0.236*** (8.05)
Corruption	-0.061 (-1.08)	-0.031 (-0.68)	-0.053 (-1.48)	-0.067* (-1.89)	-0.125* (-2.02)
Firm size	0.075*** (3.50)	0.187*** (10.61)	0.121*** (8.28)	0.187*** (15.97)	0.134*** (7.62)
ROA	0.896** (2.53)	0.546*** (3.64)	0.231* (1.76)	0.490*** (4.09)	0.265 (1.53)
Leverage	0.047 (0.33)	-0.165 (-1.23)	-0.010 (-0.11)	-0.162 (-1.36)	0.025 (0.19)
MTBV	0.006 (0.59)	0.017*** (3.64)	0.002 (0.40)	0.016*** (3.19)	0.025*** (4.68)
Cash to assets	-0.167 (-0.40)	-0.320 (-1.36)	-0.160 (-0.79)	-0.072 (-0.27)	-0.472* (-1.80)
Sales growth	-0.001 (-1.76)	-0.001*** (-3.17)	-0.000* (-1.84)	-0.001** (-2.65)	-0.001 (-1.52)
RD to sales	1.233 (0.81)	-1.331 (-0.68)	0.789 (0.59)	-1.123 (-0.66)	-0.617 (-0.47)

Ln Governance score	0.300*** (8.29)	0.384*** (8.10)	0.187*** (5.97)	0.356*** (11.57)	0.401*** (7.26)
Free float employee/family held	-0.001 (-0.72)	-0.000 (-0.16)	-0.001 (-1.01)	-0.002 (-1.12)	-0.001 (-0.64)
Free float government held	0.004* (1.91)	0.002 (1.41)	-0.001 (-0.66)	0.002 (1.66)	0.002 (1.20)
Free float investment company held	-0.006* (-1.86)	-0.002 (-1.31)	-0.003* (-2.11)	-0.001 (-0.41)	-0.003 (-1.00)
Free float pension fund held	0.002 (0.22)	-0.005 (-1.27)	0.010* (1.96)	-0.000 (-0.04)	0.006 (0.61)
Free float foreign holdings	0.002* (1.94)	0.002* (1.92)	0.001** (2.47)	0.003** (2.85)	0.002* (2.12)
Constant	-0.294 (-0.10)	-2.546 (-1.65)	-0.035 (-0.02)	-2.846** (-2.16)	-2.981 (-1.54)
Observations	4,086	4,086	4,086	4,086	4,086
R-squared	0.281	0.485	0.420	0.545	0.482
Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Panel B.

Variable	Workforce employment	Workforce health and safety	Workforce training	Comm unity	Human rights
TE	0.250 (0.37)	0.618 (1.61)	0.675 (1.70)	1.332*** (5.12)	-0.818 (-1.45)
Idv	-0.002 (-0.30)	0.004 (1.29)	0.002 (0.61)	-0.004 (-1.75)	-0.011** (-2.37)
Pdi	-0.010*** (-5.19)	-0.010*** (-8.02)	-0.008*** (-4.17)	-0.005** (-2.73)	-0.010*** (-4.14)
civil_law	0.513*** (3.75)	0.082 (0.95)	0.284** (2.61)	0.228*** (3.74)	0.314** (2.77)
ln_GDP	-0.103** (-2.64)	-0.001 (-0.03)	-0.109** (-2.17)	-0.084 (-1.72)	-0.091* (-1.89)
FOP_FH	0.002	0.001	-0.003	0.008***	0.010***

	(0.42)	(0.45)	(-0.92)	(3.11)	(3.17)
ADR index	0.127*** (5.83)	0.138*** (5.84)	0.182*** (5.57)	0.148*** (5.54)	0.189*** (5.72)
Corruption	-0.105* (-1.79)	-0.009 (-0.13)	0.077 (1.41)	-0.056 (-0.93)	-0.224*** (-3.19)
Firm size	0.113*** (5.04)	0.082*** (6.15)	0.118*** (5.54)	0.119*** (5.50)	0.112*** (6.55)
ROA	0.411 (1.68)	0.314*** (3.22)	0.491*** (3.87)	0.730*** (4.17)	0.488*** (3.24)
Leverage	-0.084 (-0.60)	-0.149 (-1.55)	-0.120 (-0.87)	-0.254* (-1.96)	-0.199** (-2.77)
MTBV	0.013** (2.39)	0.009** (2.18)	0.014*** (3.48)	0.002 (0.30)	0.004 (0.50)
Cash to assets	-0.029 (-0.08)	0.233 (0.82)	-0.068 (-0.23)	-0.110 (-0.51)	-0.249 (-0.93)
Sales growth	-0.001** (-2.56)	-0.001*** (-3.99)	-0.001** (-2.53)	-	0.001*** (-4.07)
RD to sales	0.890 (0.68)	-2.859 (-1.52)	-2.179 (-0.94)	-1.809 (-1.55)	-0.042 (-0.05)
Ln Governance score	0.417*** (8.16)	0.345*** (10.73)	0.395*** (6.74)	0.444*** (17.44)	0.280*** (8.20)
Free float employee/family held	-0.002 (-0.79)	-0.002 (-1.23)	-0.001 (-1.23)	-0.000 (-0.37)	-0.000 (-0.07)
Free float government held	0.004 (1.61)	0.002 (1.68)	0.001 (1.31)	0.002 (1.62)	0.001 (0.81)
Free float investment company held	-0.001 (-0.36)	-0.004** (-2.52)	-0.004** (-2.53)	-0.002 (-1.05)	-0.002 (-1.05)
Free float pension fund held	-0.001 (-0.11)	-0.002 (-0.42)	0.000 (0.08)	0.002 (0.33)	0.000 (0.06)
Free float foreign holdings	0.001	0.002**	0.002**	0.001	0.002**

	(0.83)	(2.43)	(2.20)	(1.72)	(2.41)
Constant	1.085 (0.38)	-0.125 (-0.08)	-1.324 (-0.75)	-2.856** (-2.68)	6.179** (2.95)
Observations	4,086	4,086	4,086	4,086	4,086
R-squared	0.353	0.493	0.436	0.471	0.447
Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

This table presents the results from regressions of environmental and social CSR components on total empathy (TE). The broad categories of environmental performance are 1) emission reduction, 2) product innovation, and 3) resource reduction. The broad categories of social performance are 1) community, 2) diversity of opportunity, 3) employment quality, 4) health and safety, 5) human rights, 6) product responsibility, and 7) training and development. The dependent variables are measured in natural logarithms. All variables are defined in the Appendices. Z-statistics are based on robust standard errors adjusted for clustering by country and are reported in parentheses. The sample comprises 4,086 observations representing 780 unique firms from 15 countries over the period 2010 to 2016.

Table 7. Results from regressions of CSR score, social score, and environmental score on empathic concern (EC)

Variable	CSR score	Social score	Environmental score
EC	0.773*** (3.64)	0.582* (2.09)	1.034*** (4.73)
idv	0.001 (0.61)	-0.000 (-0.13)	0.003 (1.56)
pdi	-0.009*** (-6.04)	-0.010*** (-6.58)	-0.008*** (-4.29)
civil_law	0.334*** (4.03)	0.405*** (4.15)	0.293*** (3.43)
ln_GDP	-0.038 (-1.38)	-0.074** (-2.15)	-0.003 (-0.10)
FOP_FH	0.003 (1.63)	0.003 (1.13)	0.004* (2.08)
ADR index	0.159*** (8.39)	0.209*** (9.05)	0.120*** (6.49)
Corruption	-0.038 (-0.95)	-0.038 (-0.72)	-0.036 (-1.13)
Firm size	0.150*** (10.66)	0.131*** (7.34)	0.185*** (11.81)
ROA	0.553*** (5.38)	0.570*** (4.13)	0.514*** (5.29)
Leverage	-0.066 (-0.63)	-0.088 (-0.82)	-0.103 (-0.78)
MTBV	0.012*** (3.04)	0.014*** (3.37)	0.013** (2.79)
Cash to assets	-0.191 (-0.78)	-0.154 (-0.51)	-0.219 (-0.93)
Sales growth	-0.001*** (-3.70)	-0.001*** (-3.35)	-0.001*** (-3.90)

RD to sales	-1.007 (-0.82)	-1.371 (-1.42)	-0.891 (-0.48)
Ln Governance score	0.420*** (11.12)	0.502*** (10.27)	0.364*** (10.53)
Free float employee/family held	-0.001 (-0.69)	-0.001 (-0.92)	-0.001 (-0.73)
Free float government held	0.002** (2.14)	0.003** (2.45)	0.002 (1.26)
Free float investment company held	-0.003* (-1.82)	-0.005** (-2.37)	-0.002 (-1.22)
Free float pension fund held	0.003 (0.54)	0.002 (0.22)	0.003 (0.56)
Free float foreign holdings	0.002*** (3.12)	0.002** (2.47)	0.003*** (3.35)
Constant	-1.506 (-1.64)	-0.974 (-0.78)	-2.615** (-2.83)
Observations	4,086	4,086	4,086
R-squared	0.594	0.570	0.552
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

This table presents results from regressions of CSR, as well as its two components, on empathic concern (EC). The CSR score is the average of the environmental score and the social score reported in the Asset4 database. The dependent variables are measured in natural logarithms. All variables are defined in the Appendices. Z-statistics are based on robust standard errors adjusted for clustering by country and are reported in parentheses. The sample comprises 4,086 observations representing 780 unique firms from 15 countries over the period 2010 to 2016.

Table 8. Results from regressions of CSR score, social score, and environmental score on perspective taking (PT)

Variable	(1) CSR score	(2) Social score	(3) Environmental score
PT	0.657** (2.50)	0.680** (2.36)	0.639** (2.23)
idv	-0.002 (-1.01)	-0.002 (-0.97)	-0.003 (-1.01)
pdi	-0.008*** (-4.58)	-0.009*** (-5.11)	-0.006*** (-3.12)
civil_law	0.227*** (3.21)	0.335*** (3.95)	0.138* (2.00)
ln_GDP	-0.051 (-1.65)	-0.091** (-2.41)	-0.010 (-0.32)
FOP_FH	0.006*** (3.03)	0.005* (1.89)	0.009*** (3.91)
ADR index	0.148*** (10.12)	0.202*** (10.30)	0.105*** (8.25)
Corruption	-0.066 (-1.55)	-0.056 (-1.05)	-0.078* (-1.96)
Firm size	0.155*** (11.51)	0.135*** (7.76)	0.191*** (12.63)
ROA	0.518*** (5.72)	0.535*** (4.28)	0.479*** (5.46)
Leverage	-0.059 (-0.56)	-0.081 (-0.76)	-0.096 (-0.73)
MTBV	0.014*** (3.50)	0.016*** (3.92)	0.014*** (3.06)
Cash to assets	-0.217 (-0.89)	-0.183 (-0.60)	-0.239 (-1.04)
Sales growth	-0.001*** (-3.60)	-0.001*** (-3.27)	-0.001*** (-3.77)

RD to sales	-0.849 (-0.70)	-1.235 (-1.33)	-0.702 (-0.39)
Ln Governance score	0.418*** (11.15)	0.501*** (10.24)	0.360*** (10.69)
Free float employee/family held	-0.001 (-0.60)	-0.001 (-0.86)	-0.001 (-0.59)
Free float government held	0.002* (1.94)	0.003** (2.31)	0.001 (0.97)
Free float investment company held	-0.004* (-1.97)	-0.005** (-2.50)	-0.003 (-1.36)
Free float pension fund held	0.001 (0.24)	0.001 (0.09)	0.000 (0.06)
Free float foreign holdings	0.002** (2.80)	0.002** (2.25)	0.002*** (3.07)
Constant	-0.729 (-0.70)	-1.098 (-0.95)	-0.650 (-0.57)
Observations	4,086	4,086	4,086
R-squared	0.593	0.570	0.549
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

This table presents the results from regressions of CSR, as well as its two components, on perspective taking (PT). The CSR score is the average of the environmental score and the social score reported in the Asset4 database. The dependent variables are measured in natural logarithms. All variables are defined in the Appendices. Z-statistics are based on robust standard errors adjusted for clustering by country and are reported in parentheses. The sample comprises 4,086 observations representing 780 unique firms from 15 countries over the period 2010 to 2016.

Table 9. Results from regressions of CSR score on total empathy (TE), empathic concern (EC), and perspective taking (PT), after excluding firms located in South Africa, South Korea, and India

Panel A. Excluding firms located in South Africa			
Variable	CSR score	CSR score	CSR score
TE	1.058*** (4.77)		
EC		0.758*** (3.69)	
PT			1.098*** (4.60)
Idv	0.004 (1.58)	0.002 (0.80)	0.004 (1.28)
Pdi	-0.013*** (-4.96)	-0.011*** (-4.28)	-0.013*** (-4.92)
civil_law	0.267*** (3.56)	0.295*** (3.74)	0.183** (2.65)
ln_GDP	-0.048 (-1.48)	-0.033 (-1.05)	-0.055 (-1.64)
FOP_FH	0.001 (0.39)	0.002 (0.70)	0.002 (0.70)
ADR index	0.165*** (10.22)	0.164*** (8.32)	0.160*** (9.98)
Corruption	-0.021 (-0.49)	-0.024 (-0.57)	-0.029 (-0.61)
Firm size	0.152*** (8.32)	0.153*** (8.60)	0.152*** (8.11)
ROA	0.549*** (4.50)	0.572*** (4.58)	0.524*** (4.43)
Leverage	-0.058 (-0.51)	-0.060 (-0.53)	-0.055 (-0.49)
MTBV	0.014** (2.89)	0.014** (2.74)	0.015*** (3.04)

Cash to assets	-0.426* (-2.11)	-0.430* (-2.10)	-0.421* (-2.10)
Sales growth	-0.001*** (-3.23)	-0.001*** (-3.22)	-0.001*** (-3.25)
RD to sales	-1.372 (-1.18)	-1.433 (-1.23)	-1.300 (-1.12)
Ln Governance score	0.422*** (10.74)	0.419*** (10.81)	0.424*** (10.61)
Free float employee/family held	-0.001 (-0.50)	-0.000 (-0.37)	-0.001 (-0.54)
Free float government held	0.003** (2.32)	0.003** (2.47)	0.002* (2.06)
Free float investment company held	-0.004 (-1.59)	-0.004 (-1.71)	-0.004 (-1.44)
Free float pension fund held	0.008** (2.81)	0.008** (2.82)	0.007** (2.32)
Free float foreign holdings	0.002*** (3.17)	0.002*** (3.39)	0.002** (2.64)
Constant	-2.457** (-2.75)	-1.463 (-1.73)	-2.370** (-2.47)
Observations	3,424	3,424	3,424
R-squared	0.598	0.596	0.598
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

Panel B. Excluding firms located in South Korea

Variable	CSR score	CSR score	CSR score
TE	0.984*** (3.36)		
EC		0.782*** (4.19)	
PT			0.746**

			(2.23)
idv	0.000 (0.11)	0.001 (0.49)	-0.003 (-1.51)
pdi	-0.009*** (-5.61)	-0.009*** (-6.33)	-0.008*** (-5.07)
civil_law	0.244*** (3.83)	0.280*** (4.64)	0.167*** (3.06)
ln_GDP	-0.017 (-0.63)	-0.011 (-0.39)	-0.018 (-0.64)
FOP_FH	0.006** (2.99)	0.004* (1.91)	0.008*** (3.44)
ADR index	0.148*** (12.33)	0.153*** (10.28)	0.141*** (13.92)
Corruption	-0.078* (-2.04)	-0.056 (-1.30)	-0.094* (-2.00)
Firm size	0.159*** (10.09)	0.155*** (9.91)	0.161*** (10.24)
ROA	0.544*** (5.24)	0.565*** (5.11)	0.530*** (5.36)
Leverage	-0.124 (-1.24)	-0.130 (-1.32)	-0.120 (-1.17)
MTBV	0.013** (2.87)	0.013** (2.66)	0.014** (3.00)
Cash to assets	-0.164 (-0.59)	-0.146 (-0.52)	-0.169 (-0.61)
Sales growth	-0.001*** (-3.46)	-0.001*** (-3.58)	-0.001*** (-3.39)
RD to sales	-0.614 (-0.36)	-0.851 (-0.49)	-0.533 (-0.31)
Ln Governance score	0.383*** (15.07)	0.385*** (15.20)	0.382*** (15.22)

Free float employee/family held	-0.001 (-0.77)	-0.001 (-0.77)	-0.001 (-0.68)
Free float government held	0.002* (1.96)	0.002* (1.97)	0.002* (1.81)
Free float investment company held	-0.003* (-1.87)	-0.003 (-1.75)	-0.004* (-1.92)
Free float pension fund held	0.000 (0.03)	0.001 (0.08)	-0.002 (-0.24)
Free float foreign holdings	0.002*** (3.40)	0.002*** (3.40)	0.002*** (3.18)
Constant	-1.885 (-1.68)	-1.351 (-1.77)	-0.803 (-0.69)
Observations	3,531	3,531	3,531
R-squared	0.597	0.597	0.596
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

Panel C. Excluding firms located in India

Variable	CSR score	CSR score	CSR score
TE	0.935*** (4.10)		
EC		0.770*** (3.74)	
PT			0.777*** (4.24)
idv	0.001 (0.67)	0.002 (0.77)	-0.001 (-0.67)
pdi	-0.010*** (-5.42)	-0.010*** (-6.00)	-0.009*** (-5.07)
civil_law	0.361*** (4.73)	0.379*** (4.86)	0.297*** (4.05)
ln_GDP	-0.007 (-0.13)	-0.005 (-0.09)	0.001 (0.02)

FOP_FH	0.002 (1.02)	0.002 (0.94)	0.004 (1.72)
ADR index	0.159*** (8.12)	0.163*** (7.85)	0.153*** (8.21)
Corruption	-0.021 (-0.50)	-0.013 (-0.32)	-0.037 (-0.81)
Firm size	0.139*** (8.03)	0.140*** (8.07)	0.139*** (8.08)
ROA	0.545*** (5.27)	0.576*** (5.21)	0.525*** (5.24)
Leverage	-0.018 (-0.18)	-0.025 (-0.24)	-0.015 (-0.15)
MTBV	0.012** (2.40)	0.012** (2.22)	0.013** (2.52)
Cash to assets	-0.174 (-0.66)	-0.163 (-0.62)	-0.175 (-0.67)
Sales growth	-0.001*** (-4.17)	-0.001*** (-4.23)	-0.001*** (-4.20)
RD to sales	-1.182 (-0.83)	-1.217 (-0.85)	-1.155 (-0.82)
Ln Governance score	0.445*** (10.23)	0.442*** (10.10)	0.446*** (10.28)
Free float employee/family held	-0.002 (-1.20)	-0.002 (-1.15)	-0.002 (-1.15)
Free float government held	0.002 (1.67)	0.002 (1.66)	0.002 (1.51)
Free float investment company held	-0.004* (-1.78)	-0.004 (-1.70)	-0.004* (-1.81)
Free float pension fund held	0.003 (0.56)	0.003 (0.66)	0.002 (0.33)
Free float foreign holdings	0.002** (2.36)	0.002** (2.41)	0.002* (2.10)

Constant	-2.213** (-2.43)	-1.702* (-2.07)	-1.442* (-1.98)
Observations	3,565	3,565	3,565
R-squared	0.594	0.593	0.593
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

This table presents the results from regressions of CSR score on total empathy (TE), empathic concern (EC), and perspective taking (PT) after excluding firms located in South Africa (Panel A), South Korea (Panel B), and India (Panel C). CSR score is the average of the environmental score and the social score reported in the Asset4 database. The dependent variables are measured in natural logarithms. All variables are defined in the Appendices. Z-statistics are based on robust standard errors adjusted for clustering by country and are reported in parentheses. The sample comprises 4,086 observations representing 780 unique firms from 15 countries over the period 2010 to 2016.

Table 10. Evidence from a quasi-natural experiment: The 2004 Indian Ocean earthquake and tsunami, and placebo test results

Panel A. Years 2004 to 2009						
Variable	Donations to sales	Donations to sales	Donations to sales	Donations to sales	Donations to sales	Donations to sales
TE	6.1720*** (4.6142)	6.1435*** (4.5950)	6.2140*** (4.6473)	6.3129*** (4.7123)	6.2718*** (4.6815)	6.3683*** (4.7530)
TE*Y2004	4.5861** (2.0288)					
TE*Y2005		6.5820*** (3.5013)				
TE*Y2006			2.3443 (1.4096)			
TE*Y2007				-1.1387 (-0.8393)		
TE*Y2008					-0.3262 (-0.2788)	
TE*Y2009						-1.5568 (-1.4608)
Controls	YES	YES	YES	YES	YES	YES
Number of observations	11,085	11,085	11,085	11,085	11,085	11,085
Panel B. Years 2010 to 2016						
Variable	Donations to sales	Donations to sales	Donations to sales	Donations to sales	Donations to sales	Donations to sales
TE	6.3108*** (4.7070)	6.2595*** (4.6676)	6.2235*** (4.6436)	6.3633*** (4.7388)	6.3330*** (4.7156)	6.1560*** (4.5867)
TE*Y2010	-0.5934 (-0.6373)					
TE*Y2011		-0.0871 (-0.1000)				
TE*Y2012			0.2429 (0.2938)			
TE*Y2013				-0.7825 (-0.9278)		
TE*Y2014					-0.5634 (-0.6719)	
TE*Y2015						0.7066 (0.8267)
Controls	YES	YES	YES	YES	YES	YES
Number of observations	11,085	11,085	11,085	11,085	11,085	11,085

This table presents the results from a natural experiment: the 2004 Indian Ocean earthquake and tsunami. The sample includes all firms covered by Asset4 during the period 2004 to 2016. We regress corporate donations (total donations to sales) on the interaction term between empathy and the year indicators. All variables are defined in the Appendices. Z-statistics are based on robust standard errors adjusted for clustering by country and are reported in parentheses.

Appendix A: Perspective Taking (PT) Scale and Empathic Concern (EC) Scale items

Read each of the following statements and rate how well each of them describes you. Please check the box that corresponds to the number which applies to you for each item:		Does not describe me well			Describes me well
IR I8	Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)	0			4
IR I9	If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (PT)	0			4
IR I10	I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)	0			4
IR I11	I believe that there are two sides to every question and try to look at both. (PT)	0			4
IR I12	I sometimes find it difficult to see things from the "other guy's" point of view. (PT)	4			0
IR I13	I try to look at everybody's side of a disagreement before I make a decision. (PT)	0			4
IR I14	When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)	0			4
IR I15	When I see people being taken advantage of, I feel kind of protective towards them. (EC)	0			4
IR I16	When I see people being treated unfairly, I sometimes don't feel very much pity for them. (EC)	4			0
IR I17	I often have tender, concerned feelings for people less fortunate than me. (EC)	0			4
IR I18	I would describe myself as a pretty soft-hearted person. (EC)	0			4
IR I19	Sometimes I don't feel very sorry for other people when they are having problems. (EC)	4			0
IR I20	Other people's misfortunes do not usually disturb me a great deal. (EC)	4			0
IR I21	I am often quite touched by things that I see happen. (EC)	0			4

NOTE: PT = perspective taking scale

EC = empathic concern scale

Scoring: Your scores are simply added up for the raw score (note that some items are reverse scored)

Your score for Perspective Taking: ____

Your score for Empathic Concern: ____

Appendix B: Description of ASSET4 pillars and categories

Pillar Categories

Environmental Performance

1. Resource Reduction
2. Emission Reduction
3. Product Innovation

Social Performance

1. Employment Quality
2. Health and Safety
3. Training and Development
4. Diversity
5. Human Rights
6. Community
7. Customer / Product Responsibility

Environmental Performance Pillar

Resource Reduction

The resource reduction category measures a company's management commitment and effectiveness towards achieving an efficient use of natural resources in the production process. It reflects a company's capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management.

Emission Reduction

The emission reduction category measures a company's management commitment and effectiveness towards reducing environmental emission in the production and operational processes. It reflects a company's capacity to reduce air emissions (greenhouse gases, F-gases, ozone-depleting substances, NO_x and SO_x, etc.), waste, hazardous waste, water discharges, spills or its impacts on biodiversity and to partner with environmental organizations to reduce the environmental impact of the company in the local or broader community.

Product Innovation

The product innovation category measures a company's management commitment and effectiveness towards supporting the research and development of eco-efficient products or services. It reflects a company's capacity to reduce the environmental costs and burdens for its customers, and thereby creating new market opportunities through new environmental technologies and processes or eco-designed, dematerialized products with extended durability.

Social Performance Pillar

Employment Quality

The workforce / employment quality category measures a company's management commitment and effectiveness towards providing high-quality employment benefits and job conditions. It reflects a company's capacity to increase its workforce loyalty and productivity by distributing rewarding and fair employment benefits, and by focusing on long-term employment growth and stability by promoting from within, avoiding lay-offs and maintaining relations with trade unions.

Health and Safety

The workforce / health and safety category measures a company's management commitment and effectiveness towards providing a healthy and safe workplace. It reflects a company's capacity to increase its workforce loyalty and productivity by integrating into its day-to-day operations a concern for the physical and mental health, well-being and stress level of all employees.

Training and Development

The workforce / training and development category measures a company's management commitment and effectiveness towards providing training and development (education) for its workforce. It reflects a company's capacity to increase its intellectual capital, workforce loyalty and productivity by developing the workforce's skills, competences, employability and careers in an entrepreneurial environment.

Diversity and Opportunity

The workforce / diversity and opportunity category measures a company's management commitment and effectiveness towards maintaining diversity and equal opportunities in its workforce. It reflects a company's capacity to increase its workforce loyalty and productivity by promoting an effective life-work balance, a family friendly environment and equal opportunities regardless of gender, age, ethnicity, religion or sexual orientation.

Human Rights

The society / human rights category measures a company's management commitment and effectiveness towards respecting the fundamental human rights conventions. It reflects a company's capacity to maintain its license to operate by guaranteeing the freedom of association and excluding child, forced or compulsory labor.

Community

The society / community category measures a company's management commitment and effectiveness towards maintaining the company's reputation within the general community (local, national and global). It reflects a company's capacity to maintain its license to operate by being a good citizen (donations of cash, goods or staff time, etc.), protecting public health (avoidance of industrial accidents, etc.) and respecting business ethics (avoiding bribery and corruption, etc.).

Customer / Product Responsibility

The customer / product responsibility category measures a company's management commitment and effectiveness towards creating value-added products and services upholding the customer's security. It reflects a company's capacity to maintain its license to operate by producing quality goods and services integrating the customer's health and safety, and preserving its integrity and privacy also through accurate product information and labeling.

Appendix C: Country-level and firm-level control variables

Variable	Definition	Source
idv	Hofstede individualism versus collectivism	Hofstede (2001)
pdi	Hofstede power distance index.	Hofstede (2001)
civil_law	Dummy variable that takes the value of 1 for civil law countries and zero otherwise.	La Porta et al. (1998)
ln_GDP	Logarithm of GDP per capita	World Development Indicators
FOP_FH	Freedom of the Press index. We multiply the original score by -1 such that higher (less negative) values indicate more freedom	Freedom House
ADR index	The Anti-Director Rights Index (ADRI) was first developed by La Porta et al. (1998) as a measure of investor protection against corporate management, and later revised by La Porta et al. (2008) and Spamann (2010).	La Porta et al. (2008) and Spamann (2010)
Corruption	Bribery and corruption do not exist. Obtained from an executive survey based on an index from 0 to 10. Higher values indicate greater control of corruption.	IMD World Competitiveness Yearbook
Firm size	Log of total assets in USD millions	Wordscope and authors' calculation
ROA	EBIT to total assets	As above
Leverage	Total debt to assets	As above
MTBV	Market to book value	As above
Cash to assets	Total cash to total assets	As above
Sales growth	Sales growth from year t - 1 to year t	As above
RD to sales	Ratio of research and development expenses to total sales. Missing research and development expenses are set to zero.	As above

Ln Governance score	Logarithm of the governance score.	Asset4 database and authors' calculation
Free float employee/family held	The percentage of strategic shareholdings of 5% or more held by employees or by individual investors.	As above
Free float government held	The percentage of strategic holdings of 5% or more held by a government or a government institution.	As above
Free float investment company held	The percentage of total shares in issue held by investment banks or institutions. In general, only holdings of 5% or more are counted as strategic.	As above
Free float pension fund held	The percentage of strategic shareholdings of 5% or more held by pension funds or endowment funds.	As above
Free float foreign holdings	The percentage of strategic shareholdings of 5% or more held in a country outside that of the issuer.	As above

Appendix D: Hofstede cultural dimensions

POWER DISTANCE INDEX (PDI)

This dimension expresses the degree to which the less powerful members of a society accept and expect that power is distributed unequally. The fundamental issue here is how a society handles inequalities among people.

People in societies exhibiting a large degree of Power Distance accept a hierarchical order in which everybody has a place and which needs no further justification. In societies with low Power Distance, people strive to equalize the distribution of power and demand justification for inequalities of power.

INDIVIDUALISM VERSUS COLLECTIVISM (IDV)

The high side of this dimension, called Individualism, can be defined as a preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families.

Its opposite, Collectivism, represents a preference for a tightly-knit framework in society in which individuals can expect their relatives or members of a particular ingroup to look after them in exchange for unquestioning loyalty. A society's position on this dimension is reflected in whether people's self-image is defined in terms of "I" or "we."

MASCULINITY VERSUS FEMININITY (MAS)

The Masculinity side of this dimension represents a preference in society for achievement, heroism, assertiveness, and material rewards for success. Society at large is more competitive. Its opposite, Femininity, stands for a preference for cooperation, modesty, caring for the weak and quality of life. Society at large is more consensus-oriented.

In the business context Masculinity versus Femininity is sometimes also related to as "tough versus tender" cultures.

UNCERTAINTY AVOIDANCE INDEX (UAI)

The Uncertainty Avoidance dimension expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. The fundamental issue here is how a society deals with the fact that the future can never be known: should we try to control the future or just let it happen?

Countries exhibiting strong UAI maintain rigid codes of belief and behaviour, and are intolerant of unorthodox behaviour and ideas. Weak UAI societies maintain a more relaxed attitude in which practice counts more than principles.

LONG TERM ORIENTATION VERSUS SHORT TERM NORMATIVE ORIENTATION (LTO)

Every society has to maintain some links with its own past while dealing with the challenges of the present and the future. Societies prioritize these two existential goals differently.

Societies who score low on this dimension, for example, prefer to maintain time-honoured traditions and norms while viewing societal change with suspicion.

Those with a culture which scores high, on the other hand, take a more pragmatic approach: they encourage thrift and efforts in modern education as a way to prepare for the future.

In the business context, this dimension is referred to as “(short term) normative versus (long term) pragmatic” (PRA). In the academic environment, the terminology Monumentalism versus Flexhumility is sometimes also used.

INDULGENCE VERSUS RESTRAINT (IND)

Indulgence stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Restraint stands for a society that suppresses gratification of needs and regulates it by means of strict social norms.