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CSR awarding: A test of social reputation and impression management Conflict of Interest disclosure:

The authors declare that there is no conflict of interest.

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CSR awarding: A test of social reputation and impression management

Abstract

Few studies have examined whether corporate social responsibility (CSR) engagement, reporting, and report attributes help companies win awards and whether award winners continue to maintain their CSR efforts after being recognized. We address this gap by conducting an empirical analysis using social reputation, signaling theory, and impression management theory. The logistics regression analysis is based on a sample of 45,840 firm-year observations from various sectors and countries between 2002 and 2019. Our results show that CSR engagement, CSR reporting, external CSR report assurance, and adoption of Global Reporting Initiative (GRI) guidelines all help companies win awards. Additionally, companies that win awards tend to maintain their commitment to CSR engagement, reporting, third-party CSR report assurance, and GRI adoption after being awarded. This finding implies that CSR-awarded firms do not consider CSR commitment and reporting a tactical commitment but rather a strategic purpose, ruling out the possibility of impression management.

Keywords: CSR; CSR reporting; third-party assurance; GRI; CSR award; social reputation

1. Introduction

As climate change and ecological transitions increasingly affect global markets, corporate social responsibility (CSR) has become a central focus in corporate governance and strategy. Businesses are under intense scrutiny from the political and public spheres for their contributions to sustainable development, making a company's reputation and success closely tied to its CSR commitments. This connection is clearly illustrated in the case of Chevenet,¹ a leading European goat cheese producer that faced severe backlash and subsequent reputational damage after whistleblower revelations concerning its CSR practices were publicized in October 2022 (Global World News Echo, 2022). Similarly, the Volkswagen Group experienced a significant reputational and financial decline after the Dieselgate scandal² revealed its violation of environmental regulations (BBC News, 2015).

The concept of social reputation, defined as stakeholders' beliefs and opinions regarding a firm's social responsibility, ethical behavior, and societal contributions (Alcañiz et al., 2010), plays a pivotal role in shaping a company's market position. Firms employ impression management strategies to craft and maintain a favorable public image, significantly influencing consumer behavior and, by extension, corporate profitability (Tata & Prasad, 2015). In today's market, a robust social reputation is crucial, influencing not only consumer loyalty and trust but also employee attraction and retention, which in turn drives broader corporate success (Yang & Liu, 2017). Corporate executives estimate that a substantial portion of a firm's market value—around 63% on average—is attributable to its reputation (Weber Shandwick and KRC Research Report,

¹ See full article on <u>https://globeecho.com/news/europe/france/l214-files-a-compliant-againt-chevenet-europrean-leader-in-goat-cheese-for-animal-abuse/</u> (accessed on November 09, 2022).

² See the full article on the Volkswagen scandal - BBC News, available at <u>https://www/bbc.com/news/business-3432472</u> (accessed on November 09, 2022).

2020³). The field of CSR recognizes the importance of reputation through various awards, such as Fortune's Most Admired Companies list (Cheng et al., 2017) and the Best 100 Companies to Work For ranking (Lewis & Carlos, 2023). These awards serve as influential indicators of a firm's commitment to best practices. They provide external recognition that significantly influences business outcomes by strengthening a company's perceived reputation (Li et al., 2022).

Despite the apparent benefits of CSR initiatives and the awards that accompany them, the motivations and outcomes associated with CSR awards remain underexplored. Although it may seem intuitive that awards are given to firms excelling in CSR activities, the causal relationship between engaging in these practices and receiving awards deserves deeper investigation. This is particularly relevant in contexts where the symbolic use of CSR has been shown to have an uncertain influence on corporate reputation. Furthermore, investors' preferences for CSR activities, influenced by cultural and institutional factors, vary globally (Wei et al., 2017). This variability suggests that CSR practices conducive to enhancing reputation in one region may not be effective universally, thereby complicating the understanding of CSR impacts on corporate reputation, which warrants further investigations on a global scale.

The academic literature has also recognized the importance of CSR awards in signaling a firm's social reputation. Research has explored the CSR practices of award-winning companies (Virakul et al., 2009), their disclosure practices (Anas et al., 2015; Arena et al., 2018), and the motivational impact of these awards on non-winning firms (Li et al., 2022). However, there is a paucity of studies that comprehensively examine how specific CSR practices—including CSR performance, CSR reporting, external CSR assurance, and the adoption of standards such as the Global Reporting Initiative (GRI)—contribute to achieving these awards. Furthermore, there is no

³ Available on <u>https://www.webershandwick.com/news/corporate-reputation-2020-everything-matters-now/</u> (accessed on November 09, 2022).

comprehensive analysis of whether awarded companies maintain their CSR engagement and reporting in the post-award period. This study, therefore, aims to bridge these gaps by examining the bidirectional relationships between the attainment of CSR awards and various CSR practices, including CSR performance, disclosure, external assurance, and GRI adoption.

Theoretically, we use signaling theory and impression management theory to test the bidirectional relationship between various CSR practices and CSR awarding. Signaling theory explains how firms use CSR activities to reduce information asymmetry and shape stakeholder perceptions, thereby enhancing their reputations and increasing their chances of receiving CSR awards (Hamrouni et al., 2022). Impression management theory describes how firms leverage CSR awards to manage public perception, possibly without substantial changes to practices (Michelon et al., 2015), thus creating a feedback loop in which CSR awards and practices reinforce each other.

Our empirical analysis covers 45,840 firm-year observations across nine sectors and 61 countries between 2002 and 2019, making the findings more generalizable than prior research. The study's findings show that CSR awarding requires CSR engagement, CSR reporting, external CSR report assurance, and GRI adoption. Additionally, these CSR efforts led to the receiving of CSR awards in the subsequent two years, ensuring sustainable stakeholder engagement for firms. Moreover, CSR award winners maintained their commitment to CSR engagement, CSR reporting, CSR report assurance, and GRI adoption during- and post-awarding periods.

This study contributes to the literature on how CSR and CSR reporting practices can be leveraged for social reputation as proxied by CSR awards. We highlight four ways in which CSR and CSR reporting practices can be used to enhance social reputations. First, unlike previous studies that focused solely on a firm's internal or external CSR policies, this study examines various CSR practices that could affect CSR awarding. We argue that corporate reputation is shaped by a range of factors, and it is important to consider the full spectrum of CSR commitments to better understand this relationship. Second, the study examines CSR consistency over time, particularly after CSR awarding, to identify firms that may be using CSR symbolically without making substantive changes to their strategies. This is of interest to corporate governance bodies and political authorities seeking to ensure consistency in CSR development. Third, we consider the perspectives of the less-studied theories of impression management and social reputation to enrich the CSR literature. Finally, the study's empirical analysis, which covers several sectors and countries, enhances the generalizability of its findings.

Following this introduction, we develop the theoretical background, review prior studies, and formulate our main hypotheses. The research methodology section outlines the variables, sample formation, and research models used in the study. The fourth section reports the findings. The final section discusses the implications of the findings, followed by a conclusion that highlights the limitations and perspectives of the study.

2. Theories and hypothesis development

2.1. Firms' CSR activities and CSR awards

According to Chun (2005), corporate reputation remains an ambiguous concept. Fombrun et al. (2000) define corporate reputation as "a cognitive representation of a company's actions and results that crystallizes the company's ability to deliver valued outcomes to its stakeholders" (p. 87). Reputation reflects a firm's standing with both internal and external stakeholders (Fombrun & van Riel, 1997) and is a key determinant of a corporation's identity, esteem, and fame (Pruzan, 2001; Hall, 1992). Prior literature suggests that reputation conveys key attributes of a firm (Fombrun & Shanley, 1990) and characteristics shaped by past corporate actions (Weigelt & Camerer, 1988). As such, reputation influences both financial and non-financial incentives (Feldman et al., 2014; Walsh et al., 2006), enhancing financial performance (Ansong & Agyemang, 2016; Gangi et al., 2020a; Pham & Tran, 2020), customer loyalty (Andreassen & Lindestad, 1998), competitive advantages (Schwaiger & Raithel, 2014), and employee engagement (Ali et al., 2020).

Reputation is often evaluated through public opinion, media coverage, and awards, the latter being external recognition of a firm's best practices (Li et al., 2022). In recent years, corporate awards have proliferated, especially in the field of CSR, where awards highlight firms with outstanding ESG practices (Carlos & Lewis, 2018). Such awards place firms under significant public scrutiny and can elevate their status (Norman et al., 2009).

Signaling theory (Spence, 1973) provides a suitable framework for examining how CSR activities can impact a firm's reputation as measured by CSR awards. Firms engaging in high levels of ESG performance can signal their commitment to sustainable practices, reducing information asymmetry between the firm and its stakeholders (Cui et al., 2018; Hamrouni et al., 2022). However, not all firms perform equally in ESG. The likelihood of winning CSR awards is expected to vary based on the extent of a firm's ESG engagement, suggesting a clear distinction between high-performing and low-performing firms. Previous empirical studies (e.g., Pfau et al., 2008) demonstrate that positive CSR activities can influence public opinion and enhance reputation, but this effect is likely to be more pronounced for firms with stronger, more transparent ESG commitments.

Therefore, we argue that the probability of winning CSR awards is significantly higher for firms that engage in higher levels of ESG performance, provide comprehensive ESG reporting, adopt third-party assurance of their CSR reports, and follow recognized frameworks such as the Global Reporting Initiative (GRI). These actions serve as stronger signals to stakeholders, enhancing the firm's chances of being awarded. Thus, we propose the following hypothesis:

H1: Firms with higher levels of ESG performance, comprehensive CSR reporting, thirdparty CSR report assurance, and GRI adoption are more likely to win CSR awards compared to firms with lower or no ESG performance.

2.2. CSR awards and firms' CSR activities

While CSR awards are given based on a firm's overall CSR engagement, it is critical to explore which specific ESG activities are more influential. Not all ESG activities contribute equally to a firm's reputation, and certain dimensions, such as environmental or social initiatives, may weigh more heavily in award decisions depending on the industry or region (Li et al., 2022). For instance, firms that invest more in environmental sustainability or social programs may be more likely to win awards than those that focus solely on governance-related activities. The distinction between the relative importance of these dimensions in securing awards has been largely unexplored, prompting the need for further investigation.

Impression management theory provides a complementary lens to understand how CSR awards may motivate continued CSR engagement. Firms that win CSR awards may use these accolades as a form of impression management, influencing stakeholder perceptions to maintain or enhance their social reputation (Michelon et al., 2015). However, the key question remains: Do firms that win awards continue to improve their ESG performance, or do they merely maintain existing levels of engagement to sustain their public image?

The ongoing commitment of award-winning firms to CSR practices may vary depending on their initial ESG performance. High ESG performers, for instance, may use CSR awards as validation of their long-term strategies, thereby reinforcing their sustainability efforts. On the other hand, low or moderate ESG performers may view awards as an opportunity to legitimize their CSR engagement without significantly enhancing their practices, relying on impression management tactics instead (Bolino et al., 2008). This dichotomy suggests that firms with stronger ESG records are more likely to sustain or increase their CSR efforts post-award.

Therefore, we propose that CSR award-winning firms, particularly those with high ESG performance, will continue or even strengthen their CSR engagement after winning awards. In contrast, firms with lower ESG performance may either stagnate or show minimal improvements in CSR activities post-award. Hence, we formulate the following hypothesis:

H2: Winning CSR awards leads to a continuation or enhancement of CSR performance, CSR reporting, third-party CSR report assurance, and GRI adoption, particularly for firms with higher initial levels of ESG performance.

3. Research methodology

In this section, we examine the research variables, sample, descriptive statistics, and correlation coefficients of the variables. We also perform country-industry-year fixed-effects (FE) logistic and ordinary least squares regression analyses for the empirical part of the study. We then present various analytical approaches in the robustness test section.

3.1. Variables

In measuring CSR awarding, engagement, and reporting, we adopted Thomson Reuters Eikon's rating system. First, a *CSR award* is proxied by a binary variable, which is denoted by 1 if the firm is awarded for its CSR engagement and 0 if not (Wu et al., 2014; Aouadi & Marsat, 2018; Kuzey et al., 2024). The award should be granted by an external body for reporting the fiscal year for its environmental, social, community, and ethical practices/performance. Examples of corporate social responsibility practices that get awarded are diminishing carbon footprints,

participating in fair trade, improving labor policies, and charitable giving.⁴ Second, CSR engagement is proxied by two variables: ESG score and ESG composite (Rajesh & Rajendran, 2020). The ESG score assesses the CSR strength of the firms in three pillars: environmental, social, and governance. The ESG composite assesses net CSR performance by incorporating CSR strengths and concerns (Refinitiv, 2021). The Thomson Reuters Eikon's ESG rating/scoring system is well-recognized for its standardized values/scores, integrity, and rigor (Stellner et al., 2015; Banerjee et al., 2020), and is commonly adopted in proxying firms' CSR performance in the past literature (Liu et al., 2022; Lu et al., 2022; Ozkan et al., 2023). Both ESG and ESG composite proxies are measured on a scale of 0-100 (Refinitiv, 2021). The higher the score, the more the firm engages in CSR practices. Third, CSR reporting, third-party assurance of CSR reports, and GRI adoption in CSR reporting are all measured by binary variables, which take 1 if they exist and 0 if they do not exist (Karaman et al., 2021; Uyar et al., 2022b). Fourth, a battery of control variables that are likely to affect CSR engagement, reporting, and awards are added to the research model. Hence, CEO duality (1 if the board chair is CEO simultaneously and 0 otherwise), board size (number of board members), firm size (natural logarithm of total assets), leverage (total debt/total assets), profitability (return on assets), current ratio (current assets/current liabilities), capital expenditure (capital expenditures/total assets), research and development (R&D) intensity (R&D expenditures/total assets), and *free float* (percentage of free float shares) (Arena et al., 2018; Karaman et al., 2021; Uyar et al., 2022b). Board characteristics are important because the board is the main strategic decision-making body influencing CSR strategies, and financial attributes show the availability of funds for deployment to CSR engagement or limit CSR engagement. Besides, financial characteristics constrain or facilitate firms' CSR engagement; therefore, they are

⁴ Please see broader definition in Table 1.

integrated into the research model. We present and define all the variables in Table A1 in the Appendix.

3.2. Sample

The research sample includes all firm-year observations, including ESG and CSR reporting data from 2002 and 2019 in Thomson Reuters Eikon. Thomson Reuters Eikon is a rich source of CSR data that has been used in prior studies (Hassan et al., 2022; Meles et al., 2023; Mishra et al., 2024). The sample covers nine sectors and 61 countries to reinforce the generalizability of the findings (Table 2 and Table A2 in the Appendix). The raw data are retrieved, cleaned, purified, and subject to various data preprocessing steps, which is a crucial phase before running the research models (Hair et al., 2019). The research sample included observations from non-financial sectors.

Initially, the dataset is prepared by cleaning, removing typos, string values, etc., and transferred to the spreadsheet environment as well as to the statistical analysis software. Following the initial descriptive statistics, *board size*, *profitability*, *leverage*, *current ratio*, *capital expenditure*, and *R&D intensity* exhibit heavy skewness. Thus, these variables are minorized at both tails with a one percent cut-off value by replacing the excess values with their corresponding minorized counterparts (Cox, 2006). Moreover, we examine the possible significant multivariate outliers. Toward this end, we perform the minimum covariance determinant method, which can robustify the Mahalanobis distance (Verardi & Dehon, 2010). Based on the results, we remove 19 outliers from the sample.

Furthermore, we perform missing value analysis. The results indicate that the ratios of the missing values range between 0.08% (*CSR awards*) and 1.26% (*current ratio*)⁵. The ratios of these indicated variables are significantly less than 5%, which is considered inconsequential (Schafer, 1999) or that it cannot cause any estimation biases during the analysis (Bennett, 2001). Although the missing value ratios are inconsequential and do not lead to any estimation bias, variables such as *current ratio*, *capital expenditure*, *free float*, *board size*, *Worldwide Governance Indicators* (*WGI*), *R&D intensity*, *profitability*, *leverage*, *firm size*, and *CSR awards* are imputed using the Marko chain Monte Carlo method. Linear regression is used as the model type for scaling the variables during the imputation of the missing values. A control variable, *market regulations*, is not subject to the imputation process since it has a missing value of 25.66%, which may cause estimation bias.

The sampling distribution is provided in Table 1. Accordingly, the initial sample size is 59,192. The financial sector, with 13,333 observations and a set of significant outliers with 19 observations, is removed from the sample (Table 1, Panel A), resulting in a final sample size of 45,840 observations for the subsequent analyses (see Table 1, Panel A). Moreover, the sample distribution based on sectors shows that industrials, with 21.01%, accounted for the highest percentage in the sample, while telecommunications services, with 3.39, made up the lowest percentage in the sample⁶. Finally, the sample distribution based on years reveals that the proportions of the observations range between 0.71% in 2002 and 12.87% in 2019 (Table 1, Panel B). The final sample size is 45,840 observations.

⁵ The missing values analysis results reveal that *Current ratio* has 1.26%, *Capital expenditure* has 1.13%, *Free float* has 0.94%, *Board size* has 0.40%, *WGI* is 0.33%, *R&D intensity* has 0.24%, *Profitability* has 0.19%, *Leverage* has 0.19%, *Firm size* has 0.18%, and CSR award has 0.08% missing observations among the research variables.

⁶ The sample distribution based on sector: industrials is 21.01%, consumer cyclicals is 18.94%, basic materials is 13.10%, technology is 11.32%, healthcare is 9.13%, consumer non-cyclicals 8.93%, energy is 8.76%, utilities is 5.43%, and telecommunications services is 3.39%.

[TABLE 1 HERE]

3.3. Research models

We model the proposed hypothesis using country-industry-year fixed-effects (FE) regression approaches. This approach, in contrast to regular regression analysis, is effective in mitigating potential concerns related to time-invariant endogeneity (Feenstra et al., 2013; Rjiba et al., 2020). Furthermore, FE regression analysis may alleviate the risk of multicollinearity (Baltagi, 2005), omitted variable bias (Wooldridge, 2010), and estimation bias (Baltagi, 2005). In modeling the proposed models, we incorporate country, industry, and year FE using the least squares dummy variable (LSDV) model approach (Gujarati, 2014). Including these FE accounts for unobservable differences between countries, industries, and time periods that may affect the dependent variable (Wooldridge, 2010), and it allows us to capture the time series and cross-sectional dimensions of the data (Singh et al., 2022).

We formulate the research models using Equations (1) and (2) below.

Logistic regression models: We employ country-industry-year FE logistic regression analysis due to the binary nature of the dependent variable. The model formulations are presented in Equation (1) below:

$$Pr(Y = 1 | X_{i1}, X_{i2}) = F(\beta_0 + \beta_1, X_{i1} + \beta_2, X_{i2})$$
(1).

where *F* is the logistic distribution function F(z) = exp(z)/(1 + exp(z)).

We develop two sets of models with binary outcomes based on Equation (1). Initially, to test H1 (Models 1–5 in Table 4), CSR awards are employed as the binary dependent variable, denoted as (Y). Equation (1) includes the following testing variables of interest, represented as (X_{i1}): *ESG composite*, *ESG*, *CSR report*, *external assurance*, and *GRI*.

Second, to test H2 (Models 3–5 in Table 5), we introduce a second set of research models with binary dependent variables. In this context, CSR reports, external assurance, and GRI serve as the binary dependent variables (Y), while CSR awards are utilized as the independent testing variable (X_{i1}) in Equation (1).

Furthermore, *CEO duality, board size, firm size, profitability, leverage, current ratio, capital expenditure, R&D intensity, free float, country effect, industry effect, and year effect are the control variables denoted by the "X_{i2}" term.*

Linear regression models: To test H2 (Models 1–2 in Table 5), we also develop research models using a linear regression approach. These models are formulated in Equation (2) and utilize the country-industry-year FE linear regression method.

$$Y_i = \beta_0 + \beta_1 \cdot X_{i1} + \beta_2 \cdot X_{i2} + \varepsilon_i \qquad \qquad i = 1, \dots, N$$

$$(2)$$

In Equation (2), the dependent variables are the ESG composite and the ESG score, denoted as (Yi). Furthermore, CSR awards is employed as the independent variable (X_{i1}). The control variables, denoted as ' X_{i2} ,' remain consistent with those used in Equation (1).

We report robust standard errors and heteroscedasticity-consistent standard errors in the regression analyses. To this end, we use the Huber Sandwich Estimator (Huber, 1967), which can control the heteroskedasticity issue (Wooldridge, 2020).

4. Findings

4.1. Summary statistics

Table 2 presents the descriptive statistics according to which 38% of the firms are awarded for their CSR engagement on average. The mean ESG composite score, which is the net CSR

performance incorporating CSR strengths and concerns, is 39.43, ranging between 0.12 and 94.09. The average ESG value is 40.90, ranging between 0.12 and 95.07. On average, 51% of the records reveal the existence of a CSR report, 43% of the observations show the existence of external assurance, and 63% of the records indicate the existence of GRI. These initial descriptives indicate that there is still a need to make greater progress in terms of ESG engagement, reporting, and getting third-party assurance on CSR reports.

[TABLE 2 HERE]

4.2. Correlation analysis and multicollinearity

We examine the bivariate linear correlation coefficients among variables by using Pearson's correlation analysis method (Table 3). The results reveal that ESG composite, ESG, CSR report, external assurance, and GRI have a significant and positive correlation with CSR awards (p < 0.01). These preliminary correlations imply that greater ESG engagement, reporting, assurance, and GRI adoption results in higher social reputation. Furthermore, the research models are subject to further check by examining the multicollinearity existence among the variables before running the regression analyses. We evaluate the variance inflation factors (VIF) for the multicollinearity analysis. The VIF values ranging between 1.02 and 1.91 are significantly smaller than the cut-off value of 10 for multicollinearity (Hair et al., 2019), hence eliminating the risk of multicollinearity (see Table A3 in the appendix).

4.3. Baseline results

The first set of research models is examined using country-industry-year FE logistic regression analysis (Table 4). The results reveal that the ESG composite, ESG, CSR report,

external assurance, and GRI have a significant and positive relationship with CSR awards⁷. We further integrate the one- and two-year lag of CSR performance and reporting variables into the model, rerun the model, and find the same results supporting a positive association between CSR performance and reporting and awarding in the subsequent periods.⁸ Thus, H1, which hypothesizes that CSR performance, CSR reporting, third-party CSR report assurance, and GRI adoption stimulate CSR awarding in the current and subsequent periods, is accepted. The results confirm prior studies' findings and propositions that gaining a CSR award requires a full commitment to CSR (Uyar et al., 2022a), such as implementing environmental and social sustainability, as well as best practices of corporate transparency. CSR disclosure helps companies build a positive social reputation and gain legitimacy and visibility (Gallego-Álvarez & Pucheta-Martínez, 2022), credible CSR reporting via external assurance fosters building corporate social reputation (KPMG, 2013), and the GRI reporting framework leads to more transparent and systematic CSR disclosure (García-Sánchez et al., 2022). CSR report assurance provides several benefits to firms, such as stimulating higher CSR performance in future periods (Uyar et al., 2023) and enhancing the credibility of CSR reports by identifying inaccuracies and restatements (Ballou et al., 2018; Michelon et al., 2019). Furthermore, GRI-based CSR reporting may assist shareholders and other stakeholders in acquiring credible, comprehensive, and structured sustainability information regarding firms' non-financial aspects (Kuzey et al., 2023). Our findings advance the current literature by proving the non-financial benefits of CSR engagement and reporting to the firm, such as the building of its social reputation.

⁷ In terms of the economic significance of the obtained results, we first calculate the product of the standard deviations of the testing variables (*ESG composite, ESG, CSR report, external assurance,* and *GRI*) and their respective coefficients. The results are as follows: $19.41 \times 0.06 = 1.203$ (ESG composite), $20.67 \times 0.07 = 1.344$ (ESG), $0.50 \times 1.89 = 0.945$ (CSR report), $0.49 \times 0.85 = 0.420$ (External assurance), and $0.48 \times 0.94 = 0.455$ (GRI). Accordingly, an increase in *ESG composite, ESG, CSR report, external assurance,* and *GRI* by one standard deviation results in a possible increase in CSR awards by 1.203, 1.344, 0.945, 0.420, and 0.455, respectively.

⁸ See the robustness tests section for reporting and Table 8 for the output of this additional test.

[TABLE 4 HERE]

Regarding the second set of research models, we perform the country-industry-year FE regression analysis (Table 5, Columns 1 & 2). Accordingly, CSR awards have a significant positive relationship with the ESG composite and ESG. In terms of the third set of research models, country-industry-year FE logistic regression analysis is performed (Table 5, Columns 3, 4, & 5). Similarly, CSR awards have a significant positive relationship with CSR reports, external assurance, and GRI. We further integrate the one- and two-year lags of CSR awarding into the model, rerun the model, and find the same results supporting the positive association between awarding and CSR performance and reporting in the subsequent periods⁹. Thus, H2, which posits that CSR awarding stimulates CSR performance, CSR reporting, third-party CSR report assurance, and GRI adoption in the current and subsequent periods, is accepted. Hence, although there are greenwashing and impression management concerns associated with CSR engagement and awarding (Talbot & Boiral, 2015; Michelon et al., 2015; Cho et al., 2016; Boiral et al., 2019), our finding denies it. Impression management deliberately aims to deceive the perceptions of stakeholders through intentional organizational actions (Bolino et al., 2008), which is, in our case, CSR awarding. However, if CSR awarding were being used as a tactical deception tool, its benefit to the firm would disappear shortly, which is refuted by our findings.¹⁰ By contrast, mounting stakeholder expectations and pressure during post-award periods encourages companies to maintain their CSR commitment after award-winning, which disproves opportunistic CSR behaviors and disclosure to build a social reputation (Haniffa & Cooke, 2005; Anas et al., 2015; Yoo & Pae, 2016).

[TABLE 5 HERE]

⁹ See the robustness tests section for reporting and Table 9 for the output of this additional test.

¹⁰ See also the lag-lead analysis reported in Tables 8 and 9.

4.4. Robustness tests

In this section, we conduct various robustness tests to check the validity of the results of the baseline analyses. The robustness checks include analyses with alternative sampling using the propensity score matching (PSM) approach, one-year and two-year lag of the independent testing variables, additional control variables, and alternative methods to address the endogeneity concern.

First, an alternative sample is generated using the PSM method. PSM is a widely applied method to reduce self-selection bias and address endogeneity by creating comparable treatment and control groups (Rosenbaum & Rubin, 1983). Toward this end, we include *CSR awards* as the treatment variable during the PSM analysis approach to match awarded firm records with identical non-awarded firm observations. The three groups of research models are subject to the new alternative sample generated by the PSM approach (Tables 6 and 7). Accordingly, the results confirm the baseline findings.

[TABLE 6 HERE]

[TABLE 7 HERE]

Second, the one-year and two-year lags of the independent testing variables of the three groups of research models are included in the research models as alternative testing variables (Table 8 and Table 9). We run this analysis to strengthen the causality as well as to test future explanatory power by lag-lead analysis. The results reveal that the one-year and two-year lags of the testing variables are significantly positive. Accordingly, the results confirm the baseline findings. This robustness test shows that the benefit of CSR awarding is sustained beyond the current period and helps firms achieve greater stakeholder engagement transparency and accountability in future periods.

[TABLE 8 HERE]

[TABLE 9 HERE]

Third, WGI¹¹ and market regulations are included as additional control variables in the three groups of research models (Table 10 and Table 11), presuming that public governance and market regulations might impact the CSR engagement of firms. Similar to the baseline analysis results, the variables of interest are significant. In addition to supporting the main findings, this test reveals that WGI is a strong stimulus of CSR engagement, reporting, assurance, and awards, whereas market regulations are a weak stimulus.

[TABLE 10 HERE]

[TABLE 11 HERE]

We select an alternative method for examining endogeneity concerns. In this regard, we execute an instrumental variable probit (IVPROBIT) regression analysis (Table 12). IVPROBIT fits the research models with CSR awards as the binary outcomes. We further incorporate Newey's (1987) method of the minimum chi-square two-step estimator with the continuous endogenous regressor. We use WGI as the exogenous instrumental variable to predict CSR awards in the IVPROBIT regression. As suggested by previous studies (Ben-Amar et al., 2017; García-Meca et al., 2022), we report the first stage, second stage, and Wald test of exogeneity (H0: no endogeneity) in Table 12. The results are consistent with the baseline findings, with the variables of interest being significantly positive.

[TABLE 12 HERE]

¹¹ World Governance Indicators (Please see Table 1 for the variable description).

To test the robustness of the results depending on the institutional environments, we derive alternative samples based on the medians of the respective variables, namely *WGI*, *market regulations*, and *GDP per capita*. These medians served as the threshold values for generating sub-samples categorized as high (greater than or equal to the median) or low (less than the median). We then reexamine the baseline research models by employing the alternative samples, and the outcomes are presented in Tables 13, 14, and 15. Based on the findings of the robustness analysis, the models exhibit consistency with the initial results for both high and low institutional environments, namely WGI, market regulations, and GDP per capita.

[TABLE 13 HERE]

[TABLE 14 HERE]

[TABLE 15 HERE]

Next, in the models that use ESG scores, we adopt two alternative variables—the average of the environmental and social pillars of ESG—and take their average. The purpose of calculating and integrating these alternative variables is that some previous studies have based their CSR performance on environmental and social responsibilities, excluding the governance pillar (Ghoul et al., 2017; Gangi et al., 2020b). Therefore, we follow their approach and rerun the model by taking the average of the environmental and social pillars of ESG (i.e., ES_score). We find that the baseline results hold confirming that higher environmental and social performents (Table 16).

[TABLE 16 HERE]

Furthermore, given that there are countries with very few firms within sample which might not produce reliable results. Hence, we re-ran the models with alternative sample for the countries with at least ten unique firms (Table 17). We find that the baseline results still hold confirming the significant association between CSR engagement and reporting and CSR awarding.

[TABLE 17 HERE]

Finally, we generated an alternative sample by eliminating the observations from South Africa after 2011 and from India after 2015 considering CSR regulations in these countries¹² (King III, 2009; Dharmapala & Khanna, 2018; Elbardan et al., 2023). Then, the baseline research models were re-ran using this alternative sample (Table 18). We observed that the baseline results still hold confirming the significant association between CSR engagement and reporting and CSR awarding.

[TABLE 18 HERE]

Consequently, the results still hold when we employ the alternative sampling using the PSM approach, running lag-lead models, including additional control variables, addressing endogeneity concerns, testing the models in high/low institutional environments, and adopting alternative samples.

5. Discussion

CSR awarding has emerged as a recent phenomenon since the widespread acceptance of CSR engagement in the business world (Li et al., 2022; Uyar et al., 2022a). Firms that are committed to addressing societal concerns seek to translate their CSR engagement into a social reputation through associated awards, which can enhance their legitimacy, provide a competitive advantage, and brighten their image in the market. Despite the increasing popularity of CSR awarding, there is still a lack of studies that comprehensively examine whether CSR engagement,

¹² India regulated and mandated CSR reporting (Dharmapala & Khanna, 2018), and South Africa regulated and mandated CSR report assurance (King III, 2009; Elbardan et al., 2023) from the years 2015 and 2011, respectively.

reporting, and report attributes facilitate firms' access to awards, and whether award winners maintain their CSR engagement and reporting practices after being awarded.

To fill this gap, we conduct a bidirectional empirical analysis to clarify the relationship between CSR engagement and receiving CSR awards. Our results show that CSR engagement, reporting, third-party CSR report assurance, and GRI adoption facilitate firms' access to awards. Moreover, CSR award-winning firms continue their commitment to CSR engagement, reporting, third-party CSR report assurance, and GRI adoption even after being awarded. Our study's findings are supported by lag analysis (for one and two periods), which confirms the bidirectional causality. Our results are also robust to propensity score-matched samples, the incorporation of additional control variables, and endogeneity concerns.

Our findings lend support to signaling and social reputation theories, which suggest that CSR performance and reporting serve as means of signaling high CSR engagement and reaching a higher level of social reputation through CSR awards (Benayoun & Tirol, 2010). Firms that implement CSR practices convey their CSR commitments to stakeholders and help differentiate themselves from non-CSR companies. Additionally, the adoption of CSR reporting, external assurance, and GRI standards is considered a signaling instrument that reduces the information gap between firms and their stakeholders (Cui et al., 2018; Hamrouni et al., 2022).

Furthermore, CSR award-winning firms maintain their commitment to CSR engagement and reporting practices even in the post-award period, indicating that they wish to preserve their social reputation. Therefore, CSR award-winning is a long-term and strategic pursuit rather than a short-term and tactical one, which rules out the possibility of impression management. The high media focus on awarded companies in the post-award period may further motivate and press them to sustain their CSR commitment in subsequent periods (Campbell & Slack, 2006; Yoo & Pae, 2016).

Finally, reports from accounting bodies/organizations such as ACCA (2010) and KPMG (2016) and prior studies (Bosso & Kumar, 2007; Anas et al., 2015; Arena et al., 2018) confirm this association and note that CSR-awarded firms experience a higher level of CSR disclosure than non-awarded firms.

6. Conclusions and implications

The findings suggest theoretical implications such that they lend support to signaling theory but reject impression management theory. In line with signaling theory, CSR awarding reflects firms' serious CSR implementation and disclosure practices, which continue for the year and two years after being awarded. This finding rejects impression management theory, as receiving CSR awards does not lead firms to laxity or neglect their stakeholders' concerns.

Notably, the findings show firms how to establish a social reputation through CSR engagement and reporting in a credible and consistent way. By executing contemporaneous and lag models, the results imply that firms exhibiting full CSR commitment to CSR practices, as well as credible and structured CSR reporting with its supplements, gain a social reputation via CSR awarding. This suggests that pursuers of CSR awards should be aware of and focus on CSR implementation and communication of CSR practices with stakeholders via reports. Implementation is important to avoid greenwashing concerns, whereas reporting enables companies to mitigate information asymmetry between them and their stakeholders. The reports enable firms to reach out to various stakeholders who are interested in environmental and social engagement. The stakeholders benefiting from reports could be investors seeking socially

23

responsible investment, creditors incorporating environmental and social issues into loan-granting decisions, and other non-financial stakeholders, such as community and environmentalists.

Furthermore, firms do not reduce their CSR commitment and reporting after being awarded, which mitigates impression management concerns due to CSR awards. Finally, CSR awards appear to drive firms' greater CSR commitment and transparency, which may help them sustain their social reputation in society. This finding implies that CSR-awarded firms do not consider CSR commitment and reporting a tactical commitment but a strategic purpose. Whereas the former implies short-term image building via CSR without deploying substantial resources, the latter implies serious CSR implementation, embedding environmental and social issues into operational processes. Thus, sustainability CSR engagement and reporting practices after gaining an award are symptomatic of pursuing a strategic CSR approach. The results outline firms' preand post-awarding guidelines for CSR commitment, which could be useful, particularly for yetnot-awarded and wish-to-gain social reputation companies.

The main limitation of the study is that CSR reporting, third-party assurance, and GRI adoption are proxied by a binary variable but not a continuous one, which implies that they do not measure the extent of associated practices.¹³. This constraint arises from the non-existence of continuous data for those variables in the data source. Another limitation is that the sample is unbalanced in terms of sector and country distribution. Nevertheless, the findings of the study pose several opportunities for future studies. First, whether CSR awards drive financial performance could be examined, focusing, for example, on spurring greater customer commitment or shareholder reaction. Second, investigating whether CSR awarding attracts greater institutional investors or analyst followings could be interesting, the results of which might help firms shape

¹³ This constraint arises from the availability of binary data for these variables in the data source.

their ownership structure and market visibility. Third, identifying the firm governance characteristics that drive receiving CSR awards may highlight the internal structure and configurations of award-winning firms. For example, whether female, tenured, and expert directors are advocates or opponents of social reputation could be examined. Fourth, it would also be interesting to explore the association between firm age and social reputation. Finally, a qualitative study may identify the motivations and aims that encourage firms to pursue CSR awarding, which may help yet-not-awarded companies achieve an award.

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Table 1			
Sampling distrib	pution		
Panel A:			
Sample at the i	nitial step		59,192
(-) Financial fin	rm observations		13,333
(-) Number of	outliers		19
Final research	sample		45,840
Panel B:			
Variable	Category	Freq.	Percent
Sector	Basic Materials	6,003	13.1
	Healthcare	4,184	9.13
	Consumer Non-Cyclicals	4,095	8.93
	Consumer Cyclicals	8,680	18.94
	Energy	4,016	8.76
	Industrials	9,629	21.01
	Telecommunications Services	1,555	3.39
	Technology	5,188	11.32
	Utilities	2,490	5.43
	Total	45,840	100
Year	2002	325	0.71
	2003	519	1.13
	2004	867	1.89
	2005	1,210	2.64
	2006	1,298	2.83
	2007	1,403	3.06
	2008	1,617	3.53
	2009	1,940	4.23
	2010	2,265	4.94
	2011	2,574	5.62
	2012	2,709	5.91
	2013	2,808	6.13
	2014	2,957	6.45
	2015	3,437	7.5
	2016	4,099	8.94
	2017	4,670	10.19
	2018	5,244	11.44
	2019	5,898	12.87
	Total	45,840	100

This table shows the sample formation procedure and sample distribution.

Table 2

Descriptive statistics

Variable	Ν	Mean	SD	Min	Q1	Median	Q3	Max
CSR awards	45,840	0.38	0.48	0.00	0.00	0.00	1.00	1.00
ESG composite	45,840	39.43	19.41	0.12	23.85	37.68	53.70	94.09
ESG	45,840	40.90	20.67	0.12	24.03	38.67	56.59	95.07
CSR report	45,840	0.51	0.50	0.00	0.00	1.00	1.00	1.00
External assurance	23,606	0.43	0.49	0.00	0.00	0.00	1.00	1.00
GRI	23,606	0.63	0.48	0.00	0.00	1.00	1.00	1.00
Board size	45,840	10.01	3.36	4.00	8.00	9.00	12.00	21.00
CEO duality	45,840	0.39	0.49	0.00	0.00	0.00	1.00	1.00
Firm size	45,840	22.12	1.62	10.65	21.13	22.15	23.17	27.41
Profitability	45,840	0.06	0.12	-0.48	0.02	0.06	0.11	0.37
Leverage	45,840	0.25	0.18	0.00	0.11	0.23	0.36	0.83
Current ratio	45,840	2.02	1.90	0.25	1.07	1.48	2.23	12.90
Capital expenditure	45,840	0.06	0.06	0.00	0.02	0.04	0.07	0.42
R&D intensity	45,840	0.02	0.05	0.00	0.00	0.00	0.01	0.27
Free float	45,840	77.09	24.76	0.00	59.98	87.82	98.29	100.00
WGI	45,688	1.11	0.59	-1.56	1.13	1.26	1.46	1.97
Market regulations	34,076	5.21	0.60	2.11	4.79	5.34	5.58	6.56

This table shows summary statistics. Variables are defined in Table 1. Q1: First Quartile; Q3: Third Quartile; SD: Standard Deviation; N: Number of Observations.

Pears	on's Correlation analy	sis							
	Variables	1	2	3	4	5	6	7	8
1	CSR awards	1							
2	ESG composite	0.473***	1						
3	ESG	0.495***	0.960***	1					
4	CSR report	0.422***	0.647***	0.660***	1				
5	External assurance	0.216***	0.470***	0.506***	0.277***	1			
6	GRI	0.232***	0.432***	0.470***	0.088^{***}	0.412***	1		
7	Board size	0.244***	0.247***	0.274***	0.238***	0.191***	0.170***	1	
8	CEO duality	0.012**	-0.035***	-0.025***	-0.091***	-0.053***	0.011*	0.062***	1
9	Firm size	0.381***	0.425***	0.487***	0.368***	0.293***	0.255***	0.510***	0.112***
10	Profitability	0.089***	0.100***	0.097***	0.088^{***}	-0.044***	-0.030***	0.068***	0.037***
11	Leverage	0.067***	0.073***	0.078***	0.056***	0.056***	0.064***	0.128***	0.014***
12	Current ratio	-0.161***	-0.189***	-0.199***	-0.189***	-0.099***	-0.080***	-0.206***	-0.004
13	Capital expenditure	-0.023***	-0.075***	-0.075***	-0.021***	-0.010*	0.005	-0.063***	-0.026***
14	R&D intensity	-0.098***	-0.060***	-0.058***	-0.145***	-0.004	0.019***	-0.140***	0.035***
15	Free float	-0.044***	0.065***	0.087***	-0.095***	-0.045***	-0.039***	-0.055***	0.136***
	Variables	9	10	11	12	13	14	15	
9	Firm size	1							
10	Profitability	0.157***	1						
11	Leverage	0.249***	-0.160***	1					
12	Current ratio	-0.356***	-0.134***	-0.346***	1				
13	Capital expenditure	-0.088***	0.004	0.021***	-0.022***	1			
14	R&D intensity	-0.269***	-0.362***	-0.183***	0.342***	-0.084***	1		
15	Free float	0.002	-0.049***	-0.004	0.045***	-0.059***	0.129***	1	

 Table 3

 Pearson's Correlation analysis

This table shows correlation analysis. Variables are defined in Table 1. *** p < 0.01, ** p < 0.05, *p < 0.1

The impact of CSR engageme	ent, reporting, assuranc	e, and GRI adoptic	on on CSR awarding	g	
	(1)	(2)	(3)	(4)	(5)
Independent variables	CSR awards	CSR awards	CSR awards	CSR awards	CSR awards
	Logit	Logit	Logit	Logit	Logit
ESG composite	0.062^{***}				
	(73.03)				
ESG		0.065***			
		(75.34)			
CSR report			1.89***		
-			(62.85)		
External assurance				0.85***	

Table 4		
The impact of CSR engagement, reporting, assurance,	, and GRI adoption on C	SR awardin

CSR report		(13.31)	1.89***		
External assurance			(62.85)	0 85***	
External assurance				(24.27)	
GRI				(/)	0.94***
					(28.10)
Board size	0.036***	0.034***	0.030***	0.022^{***}	0.022^{***}
	(7.86)	(7.31)	(6.92)	(3.98)	(3.95)
CEO duality	0.12^{***}	0.12***	0.040	0.062^{*}	0.059^{*}
	(4.35)	(4.29)	(1.50)	(1.78)	(1.66)
Firm size	0.30***	0.17***	0.41***	0.31***	0.33***
	(25.88)	(13.52)	(37.30)	(22.05)	(23.44)
Profitability	0.11	0.12	0.69***	0.40^{**}	0.51***
	(0.82)	(0.89)	(5.08)	(2.17)	(2.73)
Leverage	-0.31***	-0.20**	-0.24***	-0.065	-0.067
	(-3.84)	(-2.41)	(-3.04)	(-0.62)	(-0.64)
Current ratio	-0.048***	-0.048***	-0.060***	-0.035**	-0.031**
	(-4.82)	(-4.74)	(-6.07)	(-2.53)	(-2.24)
Capital expenditure	0.048	-0.18	-0.43*	-1.23***	-1.12***
	(0.19)	(-0.70)	(-1.74)	(-3.56)	(-3.23)
R&D intensity	0.29	-0.44	1.97***	1.26**	1.11*
-	(0.67)	(-0.99)	(4.62)	(1.98)	(1.72)
Free float	-0.00019	-0.0016**	0.0031***	0.0033***	0.0040^{***}
	(-0.30)	(-2.43)	(4.95)	(4.34)	(5.26)
Constant	-10.5***	-7.54***	-11.5***	-7.68***	-8.78^{***}
	(-20.15)	(-14.37)	(-22.40)	(-10.95)	(-12.52)
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	45808	45808	45808	23584	23584
Pseudo R ²	0.287	0.298	0.250	0.144	0.150
χ^2 -stat.	17382.62***	18046.10***	15184.03***	4637.53***	4836.41***

This table shows the impact of CSR engagement, reporting, assurance, and GRI adoption on CSR awarding. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. t statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

	(1)	(2)	(3)	(4)	(5)
Independent variables	ESG composite	ESG	CSR report	External assurance	GRI
	OLS	OLS	Logit	Logit	Logit
CSR awards	13.9***	14.8^{***}	1.92***	0.85^{***}	0.94***
	(89.63)	(95.54)	(61.84)	(24.24)	(28.29)
Board size	0.14^{***}	0.18^{***}	0.042^{***}	0.042^{***}	0.040^{***}
	(5.30)	(7.03)	(8.09)	(7.20)	(6.91)
CEO duality	-0.95***	-0.88***	0.084^{***}	-0.093**	-0.062*
-	(-6.12)	(-5.75)	(2.79)	(-2.44)	(-1.69)
Firm size	4.40***	5.79***	0.70***	0.58***	0.41***
	(73.66)	(97.43)	(53.20)	(36.85)	(27.22)
Profitability	11.1***	10.0***	1.29***	1.12***	0.19
5	(16.89)	(15.35)	(9.31)	(5.40)	(0.99)
Leverage	-2.94***	-4.46***	-0.85***	-0.11	-0.23**
8	(-6.81)	(-10.39)	(-9.86)	(-0.98)	(-2.14)
Current ratio	-0.44***	-0.41***	-0.084***	-0.028*	-0.038***
	(-10.46)	(-9.75)	(-9.01)	(-1.82)	(-2.74)
Capital expenditure	-2.66**	0.31	1.34***	1.47***	0.71**
1 1	(-2.15)	(0.26)	(5.58)	(3.96)	(2.04)
R&D intensity	33.8***	40.8***	3.69***	6.07***	5.64***
5	(16.83)	(20.42)	(8.43)	(8.75)	(8.48)
Free float	0.080***	0.093***	0.0080***	0.0037***	-0.00040
	(22.34)	(26.22)	(11.31)	(4.52)	(-0.49)
Constant	-86.5***	-117.9 ***	-21.9***	-17.7***	-9.06***
	(-43.57)	(-59.71)	(-49.86)	(-20.91)	(-13.65)
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	45840	45840	45737	23575	23569
Adj-R ²	0.454	0.523			
Pseudo R^2			0.429	0.239	0.187
F-stat.	401.66***	531.10***			
γ^2 -stat.			27173.83***	7694.72***	5818.69***

 Table 5

 The impact of CSR awarding on CSR engagement, reporting, assurance, and GRI adoptic

This table shows the impact of CSR awarding on CSR engagement, reporting, assurance, and GRI adoption. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Robustness checks

Table 6

Propensity Score Matching (PSM) (Table 5)

	(1)	(2)	(3)	(4)	(5)
Independent variables	CSR awards				
	Logit	Logit	Logit	Logit	Logit
ESG composite	0.061***				
_	(59.20)				
ESG		0.066***			
		(61.86)			
CSR report			1.86***		
-			(50.90)		
External assurance				0.85***	
				(19.50)	
GRI					0.96***
					(22.87)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
Ν	26346	26346	26346	17809	17809
Pseudo R ²	0.158	0.176	0.113	0.061	0.068
γ^2 -stat.	5388.28***	6001.42***	3836.59***	1202.99***	1333.53***

This table shows the impact of CSR engagement, reporting, assurance, and GRI adoption on CSR awarding based on PSM. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 7 Propensity Score Matching (PSM) (Table 6)

	(1)	(2)	(3)	(4)	(5)
Independent variables	ESG composite	ESG	CSR report	External assurance	GRI
	OLS	OLS	Logit	Logit	Logit
CSR awards	13.8***	14.6***	1.87^{***}	0.84***	0.97^{***}
	(69.88)	(75.48)	(50.17)	(19.19)	(23.08)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	26346	26346	26328	17811	17802
Adj-R ²	0.397	0.493			
Pseudo R^2			0.371	0.228	0.178
F-stat.	195.68***	288.92^{***}			
γ^2 -stat.			12299.03***	5613.64***	3986.92***

This table shows the impact of CSR awarding on CSR engagement, reporting, assurance, and GRI adoption based on PSM. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

	(1)	(2)	(3)	(4)	(5)
Independent variables	CSR awards	CSR awards	CSR awards	CSR awards	CSR awards
	Logit	Logit	Logit	Logit	Logit
ESG composite(t-1)	0.039***				
	(26.26)				
ESG composite(t-2)	0.018^{***}				
	(12.21)				
ESG(t-1)		0.047***			
		(25.56)			
ESG(t-2)		0.011***			
		(5.84)			
CSR report(t-1)			1.22***		
• • • •			(26.44)		
CSR report(t-2)			0.79***		
			(17.48)		
External assurance(t-1)			. ,	0.47***	
				(7.06)	
External assurance(t-2)				0.32***	
				(4.71)	
GRI(t-1)					0.61***
- (-)					(8.87)
GRI(t-2)					0.28***
					(4.18)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	34647	34647	34647	17475	16345
Pseudo R ²	0.257	0.261	0.238	0.138	0.147
γ^2 -stat.	12109.61***	12309.88***	11191.79***	3213.76***	3193.20***

 Table 8

 One- and two-year lags of the testing variables (Table 5)

This table shows the impact of CSR engagement, reporting, assurance, and GRI adoption on CSR awarding based on one- and twoyear lags of the testing variables. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. t statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 9

One- and two-year lags of the testing variables (Table 6)

	8				
	(1)	(2)	(3)	(4)	(5)
Independent variables	ESG composite	ESG	CSR report	External assurance	GRI
	OLS	OLS	Logit	Logit	Logit
CSR awards(t-1)	8.92***	9.35***	1.25***	0.54***	0.64^{***}
	(41.39)	(44.11)	(31.03)	(12.50)	(15.43)
CSR awards(t-2)	7.17***	7.79***	0.98^{***}	0.56***	0.52***
	(33.22)	(36.69)	(24.45)	(13.19)	(12.60)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	34682	34682	34602	20412	20397
Adj-R ²	0.434	0.519			
Pseudo R^2			0.409	0.245	0.199
F-stat.	293.73***	413.03***			
γ^2 -stat.			19160.54***	6880.34***	5314.17***

This table shows the impact of CSR awarding on CSR engagement, reporting, assurance, and GRI adoption based on one- and two-year lags of the testing variable. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 10	
WCI and Marlastla na milations	

WGI and Market's reg	gulations are incor	porated as the additional c	country-level con	trol variables (Table :	5)
	(1)			(4)	

	(1)	(2)	(3)	(4)	(5)
Independent variables	CSR awards	CSR awards	CSR awards	CSR awards	CSR awards
	Logit	Logit	Logit	Logit	Logit
ESG composite	0.064***				
	(64.70)				
ESG		0.068***			
		(66.53)			
CSR report			2.11***		
-			(59.15)		
External assurance				0.88***	
				(22.46)	
GRI					0.98***
					(26.00)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	34049	34049	34049	18768	18768
Pseudo R ²	0.303	0.314	0.275	0.147	0.153
χ^2 -stat.	13706.21***	14223.00***	12448.53***	3738.18***	3907.37***

This table shows the impact of CSR engagement, reporting, assurance, and GRI adoption on CSR awarding by including additional control variables, namely WGI and market regulations. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, *** p < 0.05, *** p < 0.01

Table 11

WGI and Market's regulations are incorporated as the additional country-level control variables (Table 6)

	(1)	(2)	(3)	(4)	(5)
Independent variables	ESG composite	ESG	CSR report	External assurance	GRI
	OLS	OLS	Logit	Logit	Logit
CSR awards	14.6***	15.4***	2.11^{***}	0.89^{***}	0.99^{***}
	(80.65)	(85.99)	(57.66)	(22.54)	(26.18)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	34076	34076	33994	18745	18766
Adj-R ²	0.465	0.536			
Pseudo R^2			0.435	0.243	0.194
F-stat.	337.05***	447.98***			
χ^2 -stat.			20317.25***	6249.23***	4763.22***

This table shows the impact of CSR awarding on CSR engagement, reporting, assurance, and GRI adoption by including additional control variables, namely WGI and market regulations. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 12

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Independent	ESG	CSR	ESG	CSR	CSR report	CSR	External	CSR	GRI	CSR
variables	composite	awards		awards		awards	assurance	awards		awards
	1.stage	2.stage	1.stage	2.stage	1.stage	2.stage	1.stage	2.stage	1.stage	2.stage
WGI	3.18***		3.64***		0.33***		0.42^{***}		0.33***	
	(9.52)		(10.88)		(6.34)		(5.01)		(4.68)	
ESG composite		0.11^{***}								
-		(8.67)								
ESG				0.095***						
				(9.35)						
CSR report						5.11***				
						(7.30)				
External assurance								4.65***		
								(4.22)		
GRI										4.49***
										(4.31)
Controls	Exist	Exist	Exist	Exist	Exist	Exist	Exist	Exist	Exist	Exist
Country-industry-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year FE										
Wald test of		54.03***		42.79***		69.99***		38.88***		37.44***
exogeneity										
Ν	45688	45656	45688	45656	45585	45656	23526	23535	23520	23535
F-stat	271.53***		365.43***							
γ^2 -stat.		6320.50***		7047.19***	22886.19***	4901.75***	7108.96***	1507.86***	4994.11***	1569.71***

Instrumental Variable Probit Regression (IVPROBIT) (Table 5)

This table shows the impact of CSR engagement, reporting, assurance, and GRI adoption on CSR awarding based on 2SLS regression. The instrumental variable is WGI. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 13: High/Low WGI countries (Table 5 and Table 6) Panel A: High WGI (Table 5)

Indonandant variables	(1) CSP awarda	(2) CSD awarda	(3) CSD awarda	(4) CSP awarda	(5) CSP awarda
Independent variables	Logit	Logit	Logit	Logit	Logit
ESG composite	0.058***	Logit	Logit	Logit	Logit
L L	(47.85)				
ESG		0.063***			
CCD		(49.72)	1 71444		
CSR report			$1./1^{***}$		
External assurance			(37.71)	0 85***	
				(17.96)	
GRI					0.88***
					(18.62)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
Ν	22498	22498	22498	11656	11656
Pseudo R ²	0.256	0.267	0.217	0.139	0.141
χ^2 -stat.	7492.25***	7823.18***	6349.07***	2247.52***	2272.25***
Panel B: Low WGI (Table 5)					
	(1)	(2)	(3)	(4)	(5)
Independent variables	CSR awards	CSR awards	CSR awards	CSR awards	CSR awards
	Logit	Logit	Logit	Logit	Logit
ESG composite	0.066***	Logit	Logn	Bogh	Logn
ESG composite	(54 72)				
ESG	(31.72)	0.069***			
250		(56.12)			
CSR report		(00.12)	2 05***		
estriepoir			(50.00)		
External assurance			(30.00)	0 88***	
External assurance				(16.49)	
GRI				(10.19)	1 01***
OM					(21.13)
Controls	Evist	Frist	Friet	Frist	Exist
Country_industry_year FE	Ves	Ves	Ves	Ves	Ves
N	23240	23240	23240	11007	11007
$\mathbf{P}_{\mathbf{r}}$	0.222	0.2249	0.200	0.142	0.152
$r_{\rm seudo K}$	10000 86***	10/11 50***	0.290	0.142	0.133
χ -stat.	10070.00	10411.57	9042.34	2231.90	2402.77
runei C. Iligh WGI (Tuble 0)	(1)	(2)	(2)	(4)	(5)
In dam an dant an ni abla a	(1)	(2)	(3) CSD remark	(4) E	(3) CDI
Independent variables	ESG composite	ESG	USK report	External assurance	GKI
COD	ULS 10.2***	ULS 12 0***	Logit 1.72***	Logit	Logit
CSR awards	12.3	13.2	1./3	0.85	(18.84)
	(57.28)	(61.70)	(37.02)	(17.99)	(18.84)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	22504	22504	22490	11648	11658
Adj-R ²	0.471	0.549	0.427	0.010	0.010
Pseudo R^2			0.434	0.218	0.212
F-stat.	346.95	473.04			
χ^2 -stat.			13530.45***	3454.07***	3369.91***
Panel D: Low WGI (Table 6)					
	(1)	(2)	(3)	(4)	(5)
Independent variables	ESG composite	ESG	CSR report	External assurance	GRI
	OLS	OLS	Logit	Logit	Logit
CSR awards	15.4***	16.3***	2.07***	0.88***	1.02***
	(69.13)	(73.04)	(49.34)	(16.21)	(21.19)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE				37	37
	Yes	Yes	Yes	Yes	Yes
Ν	Yes 23336	Yes 23336	Yes 23241	Yes 11915	Yes 11880
N Adj-R ²	Yes 23336 0.449	Yes 23336 0.510	Yes 23241	Yes 11915	Yes 11880

F-stat.	219.51***	279.85***			
χ^2 -stat.			14027.80***	4632.48***	2415.82***
This table shows the re-	aulto for High/Low WCL countr	ian CCD award	a is many ind by a	hinomy vonichle	which is denoted by one

This table shows the results for High/Low WGI countries. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.01, ** p < 0.05, *** p < 0.01

Table 14: High/Low Market Regulations (Table 5 and Table 6)Panel A: High Market Regulations (Table 5)

	(1)	(2)	(3)	(4)	(5)
Independent variables	CSR awards	CSR awards	CSR awards	CSR awards	CSR awards
FGC	Logit	Logit	Logit	Logit	Logit
ESG composite	0.059				
FSG	(54.50)	0.062***			
190		(56.08)			
CSR report		()	1.71***		
*			(43.69)		
External assurance				0.83***	
CD .				(18.47)	0.001111
GRI					0.88^{***}
	D ! /	D • <i>i</i>	D ' /	D 1 /	(20.13)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes 12750	Yes 12750
IN Decudo D ²	28910	28910	28910	13/39	13/39
$r_{\rm seudo}$ R^{-}	0.275	0.283	0.230 8761.03***	0.140	0.132
<u>X</u> -Stat. Panel B: Low Market Regulation	$\frac{10230.37}{ms(Table 5)}$	10361.33	8701.95	2820.27	2004.40
<u>I unei D. Low Markei Regulatio</u>	(1)	(2)	(3)	(4)	(5)
Independent variables	(1) CSR awards	(2) CSR awards	CSR awards	(4) CSR awards	(J) CSR awards
Independent variables	Logit	Logit	Logit	Logit	Logit
ESG composite	0.066***	Logit	Logit	Logit	Logn
Loc composite	(48.11)				
ESG	(1011)	0.070***			
		(49.53)			
CSR report		. ,	2.18***		
			(44.67)		
External assurance				0.90***	
				(15.80)	
GRI					1.01***
	D • <i>i</i>	D • <i>i</i>	D • <i>i</i>	D • 4	(19.22)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	16972	16972	16972	105	1 es
\mathbf{N} D seudo \mathbf{P}^2	108/3	108/3	108/3	9/98	9798
r^{2} -stat	7002.87***	7305 74***	0.274 6317 16 ^{***}	1681 23***	1707 21***
Z -Stat. Panel C: High Market Regulation	002.87	7303.74	0317.10	1001.25	1797.21
<u>1 unei C. Ingn Murket Regulata</u>	(1)	(2)	(3)	(4)	(5)
Independent variables	ESG composite	ESG	CSR report	(+) External assurance	GRI
	OLS	OLS	Logit	Logit	Logit
CSR awards	12.9***	13.6***	1.74***	0.83***	0.88***
	(65.80)	(69.98)	(43.13)	(18.38)	(20.33)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	28937	28937	20005	13751	13748
Adj-R ²	20/07	20/57	20093	15751	
Pseudo R^2	0.459	0.526	20095	13751	
1 Seddo A	0.459	0.526	0.440	0.232	0.186
F-stat.	0.459 259.22***	0.526 338.47***	0.440	0.232	0.186
F-stat. χ^2 -stat.	0.459 259.22***	0.526 338.47***	28895 0.440 17607.55***	0.232 4336.72***	0.186 3427.42***
F-stat. χ^2 -stat. Panel D: Low Market Regulation	0.459 259.22*** ms (Table 6)	0.526 338.47***	0.440 17607.55***	0.232 4336.72***	0.186 3427.42***
F-stat. χ^2 -stat. Panel D: Low Market Regulation	0.459 259.22*** <u>ons (Table 6)</u> (1)	0.526 338.47*** (2)	0.440 17607.55*** (3)	0.232 4336.72*** (4)	0.186 3427.42*** (5)
F-stat. χ^2 -stat. <u>Panel D: Low Market Regulation</u> Independent variables	0.459 259.22*** ons (Table 6) (1) ESG composite	0.526 338.47*** (2) ESG	0.440 17607.55*** (3) CSR report	0.232 4336.72*** (4) External assurance	0.186 3427.42*** (5) GRI
F-stat. χ^2 -stat. Panel D: Low Market Regulation Independent variables	0.459 259.22*** ons (Table 6) (1) ESG composite OLS	(2) ESG OLS	0.440 17607.55*** (3) CSR report Logit	0.232 4336.72*** (4) External assurance Logit	0.186 3427.42*** (5) GRI Logit
F-stat. χ^2 -stat. Panel D: Low Market Regulation Independent variables CSR awards	0.459 259.22*** 0ns (Table 6) (1) ESG composite OLS 15.4***	(2) ESG OLS 16.3***	28893 0.440 17607.55*** (3) CSR report Logit 2.16***	0.232 4336.72*** (4) External assurance Logit 0.92**	0.186 3427.42*** (5) GRI Logit 1.01***
F-stat. χ^2 -stat. Panel D: Low Market Regulation Independent variables CSR awards	0.459 259.22*** ons (Table 6) (1) ESG composite OLS 15.4*** (60.27)	(2) ESG OLS 16.3*** (64.21)	0.440 17607.55*** (3) CSR report Logit 2.16*** (43.74)	0.232 4336.72*** (4) External assurance Logit 0.92*** (15.86)	0.186 3427.42*** (5) GRI Logit 1.01*** (19.19)
Fisculo R χ^2 -stat. <u>Panel D: Low Market Regulation</u> Independent variables CSR awards <u>Controls</u>	0.459 259.22*** <u>ons (Table 6)</u> (1) ESG composite OLS 15.4*** (60.27) Exist	(2) ESG OLS 16.3*** (64.21) Exist	28893 0.440 17607.55*** (3) CSR report Logit 2.16*** (43.74) Exist	0.232 4336.72*** (4) External assurance Logit 0.92*** (15.86) Exist	0.186 3427.42*** (5) GRI Logit 1.01*** (19.19) Exist
F-stat. χ^2 -stat. Panel D: Low Market Regulation Independent variables CSR awards Controls Country-industry-year FE	0.459 259.22*** ons (Table 6) (1) ESG composite OLS 15.4*** (60.27) Exist Yes	(2) ESG OLS 16.3*** (64.21) Exist Yes	28893 0.440 17607.55*** (3) CSR report Logit 2.16*** (43.74) Exist Yes	0.232 4336.72*** (4) External assurance Logit 0.92*** (15.86) Exist Yes	0.186 3427.42*** (5) GRI Logit 1.01*** (19.19) Exist Yes Yes
F-stat. χ^2 -stat. Panel D: Low Market Regulation Independent variables CSR awards Controls Country-industry-year FE N	0.459 259.22*** 0.5 0.459 259.22*** 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	(2) ESG OLS 16.3*** (64.21) Exist Yes 16903 0621	28893 0.440 17607.55*** (3) CSR report Logit 2.16*** (43.74) Exist Yes 16822	0.232 4336.72*** (4) External assurance Logit 0.92*** (15.86) Exist Yes 9767	0.186 3427.42*** (5) GRI Logit 1.01*** (19.19) Exist Yes 9784
F-stat. χ^2 -stat. <u>Panel D: Low Market Regulation</u> Independent variables CSR awards <u>Controls</u> <u>Country-industry-year FE</u> N Adj-R ² Panel D ²	0.459 259.22*** <u>ons (Table 6)</u> (1) <u>ESG composite</u> OLS 15.4*** (60.27) <u>Exist</u> Yes 16903 0.450	(2) (2) ESG OLS 16.3*** (64.21) Exist Yes 16903 0.524	28893 0.440 17607.55*** (3) CSR report Logit 2.16*** (43.74) Exist Yes 16822 0.416	0.232 4336.72*** (4) External assurance Logit 0.92*** (15.86) Exist Yes 9767 0.266	0.186 3427.42*** (5) GRI Logit 1.01*** (19.19) Exist Yes 9784 0.108
F-stat. χ^2 -stat. <u>Panel D: Low Market Regulation</u> Independent variables CSR awards Controls Country-industry-year FE N Adj-R ² Pseudo R ² F-stat	0.459 259.22*** 0.50 (1) ESG composite OLS 15.4*** (60.27) Exist Yes 16903 0.450 168 24***	(2) (2) ESG OLS 16.3*** (64.21) Exist Yes 16903 0.524 225.98***	28893 0.440 17607.55*** (3) CSR report Logit 2.16*** (43.74) Exist Yes 16822 0.416	0.232 4336.72*** (4) External assurance Logit 0.92*** (15.86) Exist Yes 9767 0.266	0.186 3427.42*** (5) GRI Logit 1.01*** (19.19) Exist Yes 9784 0.198

This table shows the results for High/Low market regulations. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 15: High/low economic development countries based on GDP per capita (Table 5 and Table 6)	
Panel A: High GDP Per Capita (Table 5)	

Independent veriables	(1) CSP awarda	(2) CSP awarda	(3) CSP awarda	(4) CSP awarda	(5) CSP awarda
Independent variables	Logit	Logit	Logit	Logit	Logit
ESG composite		Logit	Logit	Logit	Logit
Loo composite	(50.59)				
ESG		0.069***			
		(52.28)			
CSR report			2.07***		
			(47.34)		
External assurance				0.76***	
CPI				(13.43)	0.07***
<u>OKI</u>					(18.73)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	23446	23446	23446	9990	9990
Pseudo \mathbb{R}^2	0.336	0.348	0.313	0.177	0.190
χ^2 -stat.	9861.34***	10215.88***	9187.08***	2410.76***	2583.59v
Panel B: Low GDP Per Capita	(Table 5)				
	(1)	(2)	(3)	(4)	(5)
Independent variables	CSR awards	CSR awards	CSR awards	CSR awards	CSR awards
	Logit	Logit	Logit	Logit	Logit
ESG composite	0.059***				
522	(51.71)	0.0.00			
ESG		0.062***			
CSD report		(53.07)	1 60***		
CSK lepolt			(39.57)		
External assurance			(39.37)	0 92***	
				(20.51)	
GRI				(20.51)	0.91***
-					(20.72)
Controls	Exist	Exist	Exist	Exist	Exist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
Ν	22329	22329	22329	13585	13585
Pseudo R ²	0.234	0.243	0.183	0.131	0.131
χ^2 -stat.	7156.61	7427.37	5598.35	2430.62	2433.66
Panel C: High GDP Per Capito	a (Table 6)			(1)	(7)
To the second second states	(1)	(2)	(3) CSD	(4) E. ((5) CDI
Independent variables	ESG composite	ESG	Logit	External assurance	<u> </u>
CSP awards	14 4***	15 5***	2 10***	0.70***	
CSK awalus	(64.82)	(70.41)	2.10	(13.85)	(18 78)
Controls	Fxist	Fxist	Frist	Frist	Fxist
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	23466	23466	23438	9986	9996
Adj-R ²	0.466	0.551			
Pseudo R^2			0.446	0.232	0.156
F-stat.	338.57***	470.99***			
χ^2 -stat.			14257.73***	3041.96***	2033.11***
Panel D: Low GDP Per Capita	ı (Table 6)				
	(1)	(2)	(3)	(4)	(5)
Independent variables	(1)		CCD	External assurance	GRI
	ESG composite	ESG	CSK report		
	ESG composite OLS	ESG OLS	Logit	Logit	Logit
CSR awards	ESG composite OLS 13.2***	ESG OLS 13.8***	Logit 1.68***	Logit 0.92***	Logit 0.92***
CSR awards	ESG composite OLS 13.2*** (61.15)	ESG OLS 13.8*** (64.04)	Logit 1.68*** (38.82)	Logit 0.92*** (20.29)	Logit 0.92*** (20.90)
CSR awards Controls Country inductry your EE	ESG composite OLS 13.2*** (61.15) Exist	ESG OLS 13.8*** (64.04) Exist	CSR report Logit 1.68*** (38.82) Exist Var.	Logit 0.92*** (20.29) Exist	Logit 0.92*** (20.90) Exist
CSR awards Controls Country-industry-year FE	ESG composite OLS 13.2*** (61.15) Exist Yes 22374	ESG OLS 13.8*** (64.04) Exist Yes 22274	CSR report Logit 1.68*** (38.82) Exist Yes 22266	Logit 0.92*** (20.29) Exist Yes 13576	Logit 0.92*** (20.90) Exist Yes 12540
CSR awards Controls Country-industry-year FE N Adi-R ²	ESG composite OLS 13.2*** (61.15) Exist Yes 22374 0.452	ESG OLS 13.8*** (64.04) Exist Yes 22374 0.511	Logit 1.68*** (38.82) Exist Yes 22266	Logit 0.92*** (20.29) Exist Yes 13576	Logit 0.92*** (20.90) Exist Yes 13549
CSR awards Controls Country-industry-year FE N Adj-R ² Pseudo R ²	ESG composite OLS 13.2*** (61.15) Exist Yes 22374 0.452	ESG OLS 13.8*** (64.04) Exist Yes 22374 0.511	CSR report Logit 1.68*** (38.82) Exist Yes 22266 0.406	Logit 0.92*** (20.29) Exist Yes 13576 0.246 1246	Logit 0.92*** (20.90) Exist Yes 13549 0.216

3902.63***

This table shows the results for High/low economic development countries. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is assured by an external assurance service provider and zero otherwise. GRI is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

 $[\]chi^2$ -stat.

Table 16: ES_score as the alternative variable

	(1)	(2)	
	CSR awards	ES_score	
Independent variables	Logit	OLS	
ES_score	0.059***		
	(78.23)		
CSR awards		17.6***	
		(91.44)	
Controls	Included	Included	
Country-industry-year FE	Yes	Yes	
N	45808	45840	
Adj-R ²		0.562	
Pseudo R^2	0.308		
F-stat.		620.10***	
χ^2 -stat.	18649.39***		

This table shows the association between CSR engagement and CSR awarding by using an alternative CSR performance proxy. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ES_score assesses the CSR strength of the firms by taking the average of environmental and social pillars, scaling from 0 to 100. We define all variables in Table 1. *t* statistics in parentheses. * p < 0.10, ** p < 0.05, **** p < 0.01

Table 17: Alternative sample – countries with at least ten unique firms Panel A: Table 4

	(1)	(2)	(3)	(4)	(5)
	CSR awards	CSR awards	CSR awards	CSR awards	CSR awards
Independent variables	Logit	Logit	Logit	Logit	Logit
ESG composite	0.061***				
_	(72.447)				
ESG		0.065^{***}			
		(74.727)			
CSR report			1.88^{***}		
-			(62.296)		
External assurance				0.85^{***}	
				(24.162)	
GRI					0.93***
					(27.767)
Controls	Included	Included	Included	Included	Included
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
Ν	45395	45395	45395	23413	23413
Pseudo R2	0.286	0.297	0.250	0.144	0.149
χ^2 -stat.	17185.271***	17831.781***	15024.467***	4591.005***	4775.727***
Panel B: Table 5					
	(1)	(2)	(3)	(4)	(5)
	ESG composite	ESG	CSR report	External assurance	GRI
Independent variables	OLS	OLS	Logit	Logit	Logit
CSR awards	13.9***	14.7^{***}	1.91***	0.85***	0.93***
	(88.736)	(94.572)	(61.302)	(24.109)	(27.943)
Controls	Included	Included	Included	Included	Included
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
N	45395	45395	45395	23413	23413
Adj-R ²	0.452	0.522			
Pseudo R^2			0.428	0.239	0.186
F-stat.	499.992***	662.508***			
χ^2 -stat.			26944.707***	7644.823***	5749.554***

This table shows the association between CSR engagement and CSR awarding by using an alternative sample – countries with at least ten unique firms. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. t statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 18: Alternative Sample - E	xcluding South Africa (Year 2011 and later) and India (Year	2015 and later)
Panel A: Table 4				

	(1)	(2)	(3)	(4)	(5)
	CSR awards	CSR awards	CSR awards	CSR awards	CSR awards
Independent variables	Logit	Logit	Logit	Logit	Logit
ESG composite	0.062^{***}				
	(72.472)				
ESG		0.066^{***}			
		(74.731)			
CSR report			1.91^{***}		
			(62.884)		
External assurance				0.84^{***}	
				(23.625)	
GRI					0.93***
					(27.519)
Controls	Included	Included	Included	Included	Included
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
Ν	44670	44670	44670	22546	22546
Pseudo R2	0.287	0.298	0.251	0.138	0.145
χ^2 -stat.	16946.974***	17598.153***	14848.064***	4240.930***	4437.068***
Panel B: Table 5					
	(1)	(2)	(3)	(4)	(5)
	ESG composite	ESG	CSR report	External assurance	GRI
Independent variables	OLS	OLS	Logit	Logit	Logit
CSR awards	14.0^{***}	14.9^{***}	1.94***	0.85***	0.93***
	(89.228)	(95.120)	(61.907)	(23.668)	(27.710)
Controls	Included	Included	Included	Included	Included
Country-industry-year FE	Yes	Yes	Yes	Yes	Yes
Ν	44702	44702	44550	22537	22531
Adj-R ²	0.455	0.525			
Pseudo <i>R</i> ²			0.424	0.242	0.185
F-stat.	394.559***	521.662***			
χ^2 -stat.			26181.963***	7435.515***	5545.470***

This table shows the association between CSR engagement and CSR awarding by using an alternative sample considering CSR reporting and assurance regulations in India and South Africa. CSR awards is proxied by a binary variable, which is denoted by one if the firm is awarded and zero if not. ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100. ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100. CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist. External assurance is measured by a binary variable, which takes one if the CSR report is prepared following GRI guidelines and zero otherwise. We define all variables in Table 1. t statistics in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Appendix

Table A1 Variables' list	
CSR awards	Binary variable that takes 1 if a company has obtained an award for its environmental, social, community, and ethical, practices or performance and 0 otherwise. The award should be granted by an external body for reporting fiscal year for its environmental, social, community, and ethical practices/performance. The award includes CSR practices and initiatives related to health and safety, training and development, human rights, diversity and opportunity, environmental, environmental product awards, and good citizenship/community/philanthropy, among others. Examples of corporate social responsibility practices that get awarded are diminishing carbon footprints, participating in fair trade improving labor policies and charitable giving
ESG composite	ESG composite assesses net CSR performance by incorporating CSR strengths and concerns, scaling from 0 to 100.
ESG	ESG score assesses the CSR strength of the firms in three pillars, namely environmental, social, and governance, scaling from 0 to 100.
CSR report	CSR reporting is measured by a binary variable, which takes one if it exists and 0 if it does not exist.
External assurance	External assurance is measured by a binary variable, which takes 1 if the CSR report is assured by an external assurance service provider and 0 otherwise.
GRI	GRI is measured by a binary variable, which takes 1 if the CSR report is prepared following GRI guidelines and 0 otherwise.
Board size CEO duality Firm size Profitability Leverage Current ratio Capital expenditure R&D intensity Free float WGI	Number of board members. CEO duality takes 1 if the board chair is CEO simultaneously and 0 otherwise. Natural logarithm of total assets. Income before tax is scaled by total assets. Total debt to total assets. Total current assets to total current liabilities. Total capital expenditures to total assets. R&D expenditures to total assets. Free float percentage of shares in the ownership base. The mean of six Word Governance Indicators: government effectiveness, voice and accountability, regulatory quality, political stability and absence of violence/terrorism, control of corruption, and rule of law. The composite indicator and six metrics range from 2.5 to 2.5
Market regulations	Stock market regulations assess to what extent market regulations protect financial market stability, scaling from 1 to 7 (best).

This table defines the variables.

Table A2: The sampling distribution across	countries
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1 Argentina 46 0.78 112 0.24 2 Austria 308 5.22 2.617 5.71 3 Austria 23 0.39 177 0.39 4 Bahran 2 0.03 9 0.02 5 Belgium 37 0.63 315 0.69 6 Prazil 78 1.32 596 1.30 7 Canada 245 4.15 2.389 5.21 0 Colina 33 0.56 2.28 0.50 9 China 37 0.63 362 0.79 10 Colonbin 15 0.25 79 0.17 11 Czech Republic 2 0.03 362 0.79 13 Egypt 5 0.03 362 0.79 14 Filand 32 0.53 1.03 0.03 15 Franc 152 2.32 1.24 </th <th></th> <th>Country</th> <th>Unique firms</th> <th>Percent</th> <th>Data points</th> <th>Percent</th>		Country	Unique firms	Percent	Data points	Percent
2 Australia 308 5.22 2,617 5.71 4 Babrain 23 0.03 9 0.02 4 Babrain 2 0.03 9 0.02 5 Belgium 37 0.63 315 0.69 6 Brazil 78 1.32 596 1.30 7 Caada 245 4.15 2.389 5.21 7 Cada 373 0.56 2.28 0.51 10 Colombia 15 0.25 79 0.17 11 Corch Republic 2 0.63 362 0.79 12 Dermark 37 0.63 362 0.79 13 Esprit 5 0.063 362 0.79 14 Finind 32 0.77 0.33 0.07 14 Haig 137 0.33 0.07 14 Haig 33 0.56 2.68 0.82 </td <td>1</td> <td>Argentina</td> <td>46</td> <td>0.78</td> <td>112</td> <td>0.24</td>	1	Argentina	46	0.78	112	0.24
3 Austria 23 0.39 177 0.39 4 Bahraina 2 0.03 9 0.02 5 Belgium 37 0.63 315 0.66 6 Brazil 78 1.32 596 1.30 7 Canada 245 4.15 2.389 5.21 10 Colmina 37 6.52 1.150 2.51 10 Colmina 37 6.63 362 0.79 11 Czech Republic 2 0.03 362 0.79 12 Dermarka 37 0.63 362 0.79 13 Expt 5 0.08 40 0.09 14 Frinance 137 2.32 1.278 2.39 14 Frinance 137 2.32 1.37 0.30 16 Germary 152 2.58 1.211 2.64 17 Greace 187 0.015	2	Australia	308	5.22	2,617	5.71
4 Bahrain 2 0.03 9 0.02 5 Beiguma 37 0.03 315 0.06 6 Brazil 78 1.32 S96 1.30 7 Canada 245 4.15 2.389 5.21 8 China 373 6.32 1.150 2.51 10 Colombia 15 0.25 79 0.17 11 Cach Republic 2 0.03 362 0.79 12 Denmark 37 0.63 362 0.79 13 Egypt 5 0.05 362 0.79 14 Hiland 32 0.58 1.21 2.64 15 France 137 2.32 1.37 0.30 16 Germary 152 2.58 1.21 1.20 33 0.07 16 Gerg Kong 187 3.17 1.590 3.29 1.10 1.25	3	Austria	23	0.39	177	0.39
5 Belgium 37 0.63 315 0.69 6 Brazil 78 1.32 Sp6 1.30 7 Canuda 245 4.15 2.389 5.21 8 Chine 33 0.56 228 0.50 9 China 373 6.32 1.150 2.51 10 Colombia 15 0.25 79 0.17 11 Cacch Republic 2 0.03 2.3 0.05 12 Demmat 37 0.63 362 0.79 13 Egypt 5 0.08 40 0.09 14 Frinland 32 0.54 382 0.33 15 France 137 2.32 1.212 2.44 16 Greece 17 0.29 1.37 0.30 18 Hong Kong 187 3.17 1.500 3.29 11 Holonesia 33 0.05	4	Bahrain	2	0.03	9	0.02
6 Fazil Mark 78 1.32 596 1.30 6 Mark 245 4.15 2.389 5.21 8 Chile 33 0.56 2.28 0.50 9 China 373 6.32 1.150 2.51 10 Colombia 15 0.25 79 0.17 11 Czech Republic 2 0.03 23 0.05 11 Czech Republic 2 0.03 23 0.05 12 Demmark 37 0.63 362 0.79 13 Egypt 5 0.08 40 0.09 14 Finland 32 2.58 1.211 2.44 16 Germany 152 2.58 1.211 1.50 3.29 19 Hungary 4 0.07 33 0.07 1.50 14 Halp 71 1.20 487 1.06 15 rapan	5	Belgium	37	0.63	315	0.69
7 Canada 245 4.15 2.389 5.31 8 Chine 33 0.56 228 0.50 9 China 173 6.32 1.150 2.51 10 Colombia 15 0.25 79 0.17 110 Czech Republic 2 0.03 2.3 0.05 12 Denmark 37 0.63 362 0.79 13 Egypt 5 0.08 40 0.09 14 Finance 137 2.32 1.278 2.79 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 137 0.30 18 Hong Kong 187 3.17 1.509 3.29 19 Hungary 4 0.07 33 0.07 1 Holonsia 132 0.56 268 0.58 1 Indonsia 12 0.03	6	Brazil	78	1 32	596	1 30
China 27 1.5 2.28 0.51 9 China 373 6.32 1,150 2.51 10 Colombia 15 0.25 79 0.17 11 Czech Republic 2 0.03 23 0.05 11 Czech Republic 2 0.03 23 0.05 12 Dennark 37 0.63 362 0.79 13 Figypt 5 0.08 40 0.09 14 Finland 32 0.54 382 0.83 15 France 137 2.32 1.211 2.64 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 133 0.07 18 Hong Kong 13 1.120 487 1.06 21 Indonesia 33 0.56 2.68 0.51 21 Indonis 117 1.98 2.2	7	Canada	245	1.52	2 380	5.21
b Chine D3 0.30 L2.6 0.00 10 Colombia 15 0.25 79 0.17 10 Cach Republic 2 0.03 23 0.05 12 Denmark 37 0.63 362 0.79 13 Egypt 5 0.08 40 0.09 14 Finland 32 0.54 382 0.83 15 France 137 2.32 1.278 2.79 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 137 0.30 18 Hong Kong 187 3.17 1.509 3.29 10 Indonsia 33 0.56 268 0.58 1 Indonsia 33 0.56 268 0.58 1 1.20 487 1.06 1.150 2 Iraliad', Republic of 8 0.14 1.	8	Chile	245	4.15 0.56	2,309	0.50
9 Colombia 153 0.32 1,100 2.31 11 Czech Republic 2 0.03 23 0.05 11 Carch Republic 2 0.03 23 0.05 12 Denmark 37 0.63 362 0.79 13 Egypt 5 0.08 40 0.09 14 Finland 32 0.54 382 0.83 15 France 137 2.32 1.211 2.64 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 137 0.30 18 Hong Kong 187 3.17 1.509 3.29 19 Hungary 4 0.07 33 0.07 21 Indonesia 33 0.56 288 0.38 22 Indonesia 33 0.57 0.36 1.126 23 Israel 9 0	0	China	272	6.20	1 150	0.50
10 Coolumna 15 0.23 15 0.17 11 Cacch Republic 2 0.03 22 0.03 12 Demmark 37 0.63 362 0.79 13 Egypt 5 0.08 40 0.09 14 Finland 32 0.54 382 0.83 15 France 137 2.32 1.278 2.79 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 137 0.30 18 Hong Kong 187 3.17 1.509 3.29 19 Hungary 4 0.07 33 0.07 20 Indonesia 132 0.56 268 0.58 21 Ireland; Republic of 8 0.14 71 0.15 23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 0.01 25 Israel 91 0.02	9	Calambia	575 15	0.32	1,150	2.31
11 C2C01 Republic 2 0.03 2.5 0.03 13 Egypt 5 0.08 40 0.09 13 Egypt 5 0.08 40 0.09 14 Finland 32 0.54 382 0.83 15 France 137 2.32 1.278 2.79 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 1337 0.30 18 Hong Kong 187 3.17 1.509 3.29 19 Hungary 4 0.07 33 0.07 10 Inda 112 1.90 741 0.15 11 Iagan 35 0.56 2.68 0.58 21 Ireland: Republic of 8 0.14 71 0.15 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36	10	Cololibla	15	0.23	79	0.17
12 Definitiants 37 0.63 302 0.79 13 Egypt 5 0.08 40 0.09 14 Finland 32 0.54 382 0.83 15 France 137 2.32 1.278 2.79 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 137 0.30 18 Hong Kong 187 3.17 1.509 3.29 19 Hungary 4 0.07 33 0.07 20 India 112 1.90 741 1.62 21 India (Rpublic OF 8 0.14 71 0.15 23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.01 2 0.01 27 Kora: Republic (S. Korea) 117 1.98 </td <td>11</td> <td>Czech Republic</td> <td>2</td> <td>0.05</td> <td>25</td> <td>0.03</td>	11	Czech Republic	2	0.05	25	0.03
15 Egypt 5 0.08 40 0.09 15 France 137 2.32 1.278 2.79 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 137 0.30 18 Hong Kong 187 3.17 1.509 3.29 19 Hungary 4 0.07 33 0.07 20 India 112 1.90 741 1.62 21 Indonesia 33 0.56 268 0.58 22 Ireland; Republic of 8 0.14 71 0.15 23 Israel 9 0.15 104 0.23 24 Haly 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 24 Kavai 4 0.07 25 0.01 25 Maxisia 49 0.83	12	Denmark	3/	0.63	362	0.79
14 initiand 32 0.34 382 0.85 15 France 137 2.32 1.278 2.79 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 137 0.30 18 Hong Kong 187 3.17 1.509 3.29 19 Hungary 4 0.07 33 0.07 20 India 112 1.90 741 1.62 21 Indonesia 33 0.56 268 0.58 23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 8 0.02 30 Lozemboing E. Korea 117 1.98 </td <td>13</td> <td>Egypt</td> <td>5</td> <td>0.08</td> <td>40</td> <td>0.09</td>	13	Egypt	5	0.08	40	0.09
15 France 137 2.32 1.278 2.79 16 Germany 152 2.58 1.211 2.64 17 Greece 17 0.29 137 0.30 18 Hong Kong 187 3.17 1.509 3.29 19 Hungary 4 0.07 33 0.07 20 India 112 1.90 741 1.62 21 Indonesia 33 0.56 268 0.38 22 Ireland, Republic of 8 0.14 71 0.05 23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 8 0.02 21 Kavakhstan 2 0.03 0.5 0.38 22 Mexico 38 0.64 279 </td <td>14</td> <td>Finland</td> <td>32</td> <td>0.54</td> <td>382</td> <td>0.83</td>	14	Finland	32	0.54	382	0.83
16 Germany 152 2.58 1,211 2.64 17 Greece 17 0.29 137 0.30 18 Hong Kong 187 3.17 1,509 3.29 19 Hungary 4 0.07 33 0.07 20 India 112 1.90 741 1.62 21 Indenesia 33 0.56 268 0.58 21 Ireland, Republic of 8 0.14 71 0.15 23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Korea; Republic (S. Korea) 117 1.98 922 2.01 20 Korea; Republic (S. Korea) 1 0.02 8 0.02 31 Malaysia 49 0.83 405 0.88 32 Mexico 38 <td>15</td> <td>France</td> <td>137</td> <td>2.32</td> <td>1,278</td> <td>2.79</td>	15	France	137	2.32	1,278	2.79
17 Greece 17 0.29 137 0.30 18 Hongary 18 0.07 33 0.07 19 Hungary 4 0.07 33 0.07 20 India 112 1.90 741 1.62 21 Inclonesia 33 0.56 268 0.38 22 Ireland, Republic of 8 0.14 71 0.15 23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 8 0.02 38 0.64 279 0.61 33 39 Maxis 49 0.83 405 0.88 32 Mexico 38 0.64 279 0.61 34 Netherlands 45 0.76 425 0.93	16	Germany	152	2.58	1,211	2.64
18 Hong Kong 187 3.17 1,509 3.29 19 Hugary 4 0.07 33 0.07 20 India 112 1.90 741 1.62 21 Indonesia 33 0.56 268 0.58 21 Ircland: Republic of 8 0.14 71 0.15 23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 8 0.02 30 Luxembourg 1 0.02 8 0.02 31 Malaysia 45 0.76 425 0.93 35 Nexico 38 0.64 279 0.61 33 Moroco 1 0.02	17	Greece	17	0.29	137	0.30
19 Hungary 4 0.07 33 0.07 20 India 112 1.90 741 1.62 21 Indonesia 33 0.56 268 0.58 21 Ireland: Republic of 8 0.14 71 0.15 21 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 5 0.01 28 Korea; Republic (S. Korea) 117 1.98 922 2.01 29 Kuwait 4 0.07 25 0.05 20 Luxembourg 1 0.02 8 0.02 31 Malaysia 49 0.83 405 0.88 32 Mexico 38 0.64 279 0.61 34 Netherlands 45 0.76	18	Hong Kong	187	3.17	1,509	3.29
20 India 112 1.90 741 1.62 21 Indonesia 33 0.56 268 0.58 21 Ireland; Republic of 8 0.14 71 0.15 23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Keya 1 0.02 5 0.01 28 Korca: Republic (S. Korea) 117 1.98 922 2.01 29 Kuwait 4 0.07 25 0.05 30 Luxembourg 1 0.02 8 0.02 31< Malaysia	19	Hungary	4	0.07	33	0.07
21 Inclonesia 33 0.56 268 0.58 23 Israel 9 0.15 104 0.15 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 5 0.01 28 Korea; Republic (S. Korea) 117 1.98 922 2.01 29 Kuwait 4 0.07 25 0.05 20 Luxembourg 1 0.02 8 0.02 31 Malaysia 49 0.83 405 0.88 32 Mexico 38 0.64 279 0.61 33 Moreco 1 0.02 11 0.02 34 Netherlands 45 0.76 425 0.93 35 New Zealand 42 0.71 7 0.44 49 0.07 17 0.44 2 <td>20</td> <td>India</td> <td>112</td> <td>1.90</td> <td>741</td> <td>1.62</td>	20	India	112	1.90	741	1.62
22 Ireland; Republic of 8 0.14 71 0.15 23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 5 0.01 28 Kwait 4 0.07 25 0.05 30 Luxembourg 1 0.02 8 0.02 31 Malaysia 49 0.83 405 0.88 32 Mexico 38 0.64 279 0.61 33 Morocco 1 0.02 11 0.02 34 Netherlands 45 0.76 425 0.93 35 New Zealand 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 <td< td=""><td>21</td><td>Indonesia</td><td>33</td><td>0.56</td><td>268</td><td>0.58</td></td<>	21	Indonesia	33	0.56	268	0.58
23 Israel 9 0.15 104 0.23 24 Italy 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 5 0.01 28 Korca: Republic (S. Korea) 117 1.98 922 2.01 29 Kuwait 4 0.07 25 0.05 20 Luxembourg 1 0.02 8 0.02 31 Malaysia 49 0.83 405 0.88 32 Mexico 38 0.64 279 0.61 33 Morocco 1 0.02 11 0.02 34 Netherlands 45 0.76 425 0.93 35 New Zealand 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 <td>22</td> <td>Ireland; Republic of</td> <td>8</td> <td>0.14</td> <td>71</td> <td>0.15</td>	22	Ireland; Republic of	8	0.14	71	0.15
24 Iraly 71 1.20 487 1.06 25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 5 0.01 28 Korea: Republic (S. Korea) 117 1.98 922 2.01 29 Kuwait 4 0.07 25 0.05 30 Luxembourg 1 0.02 8 0.02 31 Malaysia 49 0.83 405 0.88 20 Mexico 38 0.64 279 0.61 33 Morocco 1 0.02 11 0.02 34 Netherlands 45 0.76 425 0.93 35 New Zealand 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 0.04 38 Pakistan 2 0.03 6 <td>23</td> <td>Israel</td> <td>9</td> <td>0.15</td> <td>104</td> <td>0.23</td>	23	Israel	9	0.15	104	0.23
25 Japan 375 6.36 5.163 11.26 26 Kazakhstan 2 0.03 4 0.01 26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 5 0.01 28 Korea; Republic (S. Korea) 117 1.98 922 2.01 29 Kuwait 4 0.07 25 0.05 30 Luxembourg 1 0.02 8 0.02 31 Malaysia 49 0.83 405 0.88 32 Mexico 38 0.64 279 0.61 33 Morocco 1 0.02 11 0.02 34 Netherlands 45 0.76 425 0.93 35 New Zealand 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 0.04 41 Philippines 16 0.27 <td< td=""><td>24</td><td>Italy</td><td>71</td><td>1.20</td><td>487</td><td>1.06</td></td<>	24	Italy	71	1.20	487	1.06
26 Kazakhstan 2 0.03 4 0.01 27 Kenya 1 0.02 5 0.01 28 Korea; Republic (S. Korea) 117 1.98 922 2.01 28 Korea; Republic (S. Korea) 117 0.02 8 0.02 30 Luxembourg 1 0.02 8 0.02 31 Malaysia 49 0.83 405 0.88 32 Mexico 38 0.64 279 0.61 33 Morocco 1 0.02 11 0.02 34 Netherlands 45 0.76 425 0.93 35 New Zealand 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 0.04 40 Poland 30 0.51 186 0.41 41 Philippines 16 0.27 140 0.31	25	Japan	375	6.36	5,163	11.26
27Kenya1 0.02 5 0.01 28Korea; Republic (S. Korea)117 1.98 922 2.01 29Kuwait4 0.07 25 0.05 30Luxembourg1 0.02 8 0.02 31Malaysia 49 0.83 405 0.88 32Mexico 38 0.64 279 0.61 33Morocco1 0.02 11 0.02 34Netherlands 45 0.76 425 0.93 35New Zealand 42 0.71 291 0.63 36Norway 54 0.92 375 0.82 37Oman 4 0.07 17 0.04 38Pakistan 2 0.03 6 0.01 39Peru 26 0.44 91 0.20 40Poland 30 0.51 186 0.41 41Philippines 16 0.27 140 0.31 42Portugal 15 0.25 126 0.27 43Qatar 8 0.14 42 0.09 44Russia 35 0.59 327 0.71 45Saudi Arabia 20 0.34 83 0.18 46Slovenia 1 0.02 2 0.00 47Singapore 32 0.54 410 0.89 48Spain 56 0.95 501 1.09 <	26	Kazakhstan	2	0.03	4	0.01
28 Korea; Republic (S. Korea) 117 1.98 922 2.01 29 Kuwait 4 0.07 25 0.05 30 Luxembourg 1 0.02 8 0.02 31 Malaysia 49 0.83 405 0.88 32 Mexico 38 0.64 279 0.61 33 Morocco 1 0.02 11 0.02 34 Netherlands 45 0.76 425 0.93 35 New Zealand 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 0.04 38 Pakistan 2 0.03 6 0.01 39 Peru 26 0.44 91 0.20 41 Philippines 16 0.27 140 0.31 42 Portugal 15 0.25 126 0.27 43 Qatar 8 0.14 42 </td <td>27</td> <td>Kenva</td> <td>1</td> <td>0.02</td> <td>5</td> <td>0.01</td>	27	Kenva	1	0.02	5	0.01
50Luxe integrate (c) finite1002510030Luxembourg10.0280.0231Malaysia490.834050.8832Mexico380.642790.6133Morocco10.02110.0234Netherlands450.764250.9335New Zealand420.712910.6336Norway540.923750.8237Oman40.07170.0438Pakistan20.0360.0139Peru260.44910.2040Poland300.511860.4141Philippines160.271400.3142Portugal150.251260.2743Qatar80.14420.0944Russia350.593270.7145Saudi Arabia200.34830.1846Slovenia10.0220.0048Spain560.955011.0949South Africa891.517601.6653Thailand330.562450.5354Taiwan1282.171.0452.2855Turkey430.731920.4256Uganda10.0210.00 </td <td>28</td> <td>Korea: Republic (S. Korea)</td> <td>117</td> <td>1 98</td> <td>922</td> <td>2.01</td>	28	Korea: Republic (S. Korea)	117	1 98	922	2.01
DefinitionDefinitionDefinitionDefinition30Luxembourg10.0280.0231Malaysia490.834050.8832Mexico380.642790.6133Morocco10.02110.0234Netherlands450.764250.9335New Zealand420.712910.6336Norway540.923750.8237Oman40.07170.0438Pakistan20.0360.0139Peru260.44910.2040Poland300.511860.4141Philippines160.271400.3142Portugal150.251260.2743Qatar80.14420.0944Russia350.593270.7145Saudi Arabia200.34830.1846Slovenia10.0220.0047Singapore320.544100.8948Spain560.955011.0949South Africa891.517601.6651Shailand330.562450.5354Taiwan1282.171.0452.2855Turkey430.731920.42	29	Kuwait	4	0.07	25	0.05
50 Date functing 1 0.52 0 0.52 31 Malaysia 49 0.83 405 0.82 32 Mexico 38 0.64 279 0.61 33 Morocco 1 0.02 11 0.02 34 Netherlands 45 0.76 425 0.93 35 New Zealand 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 0.04 38 Pakistan 2 0.03 6 0.01 39 Peru 26 0.44 91 0.20 40 Poland 30 0.51 186 0.41 41 Philippines 16 0.27 140 0.31 42 Portugal 15 0.25 126 0.27 43 Qatar 8 0.14 42 0.09 44 Russia 35 0.59 327 0.	30	Luxembourg	1	0.07	8	0.03
1Initialization400.654050.6032Mexico380.642790.6133Morocco10.02110.0234Netherlands450.764250.9335New Zealand420.712910.6336Norway540.923750.8237Oman40.07170.0438Pakistan20.0360.0139Peru260.44910.2040Poland300.511860.4141Philippines160.271400.3142Portugal150.251260.2743Qatar80.14420.0944Russia350.593270.7145Saudi Arabia200.34830.1846Slovenia10.0220.0047Singapore320.544100.8948Spain560.955011.0949South Africa891.517601.6650Sri Lanka10.02100.0251Sweden1101.877461.6352Switzerland981.667581.6553Thailand330.562450.5354Taiwan1282.171.045 <td< td=""><td>31</td><td>Malaysia</td><td>1</td><td>0.83</td><td>405</td><td>0.88</td></td<>	31	Malaysia	1	0.83	405	0.88
12 Microco 1 0.02 11 0.02 34 Netherlands 45 0.76 425 0.93 35 New Zealand 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 0.04 38 Pakistan 2 0.03 6 0.01 39 Peru 26 0.44 91 0.20 40 Poland 30 0.51 186 0.41 41 Philippines 16 0.27 140 0.31 42 Portugal 15 0.25 126 0.27 43 Qatar 8 0.14 42 0.09 44 Russia 35 0.59 327 0.71 45 Saudi Arabia 20 0.34 83 0.18 46 Slovenia 1 0.02 2 0.	31	Mexico	38	0.63	405	0.60
33 Netherlands 45 0.76 425 0.93 34 Netherlands 42 0.71 291 0.63 35 New Zealand 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 0.04 38 Pakistan 2 0.03 6 0.01 39 Peru 26 0.44 91 0.20 40 Poland 30 0.51 186 0.41 41 Philippines 16 0.27 140 0.31 42 Portugal 15 0.25 126 0.27 43 Qatar 8 0.14 42 0.09 44 Russia 35 0.59 327 0.71 45 Saudi Arabia 20 0.34 83 0.18 46 Slovenia 1 0.02 2 0.00 47 <td< td=""><td>22</td><td>Morago</td><td>1</td><td>0.07</td><td>11</td><td>0.01</td></td<>	22	Morago	1	0.07	11	0.01
35Neuterlands4.30.704.2.30.5336Norway540.923750.6337Oman40.07170.0438Pakistan20.0360.0139Peru260.44910.2040Poland300.511860.4141Philippines160.271400.3142Portugal150.251260.2743Qatar80.14420.0944Russia350.593270.7145Saudi Arabia200.34830.1846Slovenia10.0220.0048Spain560.955011.0949South Africa891.517601.6650Sri Lanka10.02100.0251Sweden1101.877461.6352Switzerland981.667581.6553Thailand330.731920.4254Uganda10.0210.0055Turkey430.731920.4256Uganda10.0210.0057Turkey430.731920.4256Uganda10.0210.0057Turkey430.731920.42	24	Notberlands	1 45	0.02	11	0.02
35 New Zeanad 42 0.71 291 0.63 36 Norway 54 0.92 375 0.82 37 Oman 4 0.07 17 0.04 38 Pakistan 2 0.03 6 0.01 39 Peru 26 0.44 91 0.20 40 Poland 30 0.51 186 0.41 41 Philippines 16 0.27 140 0.31 42 Portugal 15 0.25 126 0.27 43 Qatar 8 0.14 42 0.09 44 Russia 35 0.59 327 0.71 45 Saudi Arabia 20 0.34 83 0.18 46 Slovenia 1 0.02 2 0.00 47 Singapore 32 0.54 410 0.89 48 Spain 56 0.95 501 1.09	54 25	Neurerianus	43	0.70	423	0.93
360NOrWay54 0.92 37.5 0.82 37Oman4 0.07 17 0.04 38Pakistan2 0.03 6 0.01 39Peru26 0.44 91 0.20 40Poland30 0.51 186 0.41 41Philippines16 0.27 140 0.31 42Portugal15 0.25 126 0.27 43Qatar8 0.14 42 0.09 44Russia 35 0.59 327 0.71 45Saudi Arabia 20 0.34 83 0.18 46Slovenia1 0.02 2 0.00 47Singapore 32 0.54 410 0.89 48Spain 56 0.95 501 1.09 49South Africa 89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden 110 1.87 746 1.63 52Switzerland 98 1.66 758 1.65 53Thailand 33 0.56 245 0.53 54Taiwan 128 2.17 1.045 2.28 55Turkey 43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70	33	New Zealand	42	0.71	291	0.03
37Oman4 0.07 17 0.04 38Pakistan2 0.03 6 0.01 39Peru 26 0.44 91 0.20 40Poland 30 0.51 186 0.41 41Philippines 16 0.27 140 0.31 42Portugal 15 0.25 126 0.27 43Qatar 8 0.14 42 0.09 44Russia 35 0.59 327 0.71 45Saudi Arabia 20 0.34 83 0.18 46Slovenia 1 0.02 2 0.00 47Singapore 32 0.54 410 0.89 48Spain 56 0.95 501 1.09 49South Africa 89 1.51 760 1.66 50Sri Lanka 1 0.02 10 0.02 51Sweden 110 1.87 746 1.63 52Switzerland 98 1.66 758 1.65 53Thailand 33 0.56 245 0.53 54Taiwan 128 2.17 1.045 2.28 55Turkey 43 0.73 192 0.42 56Uganda 1 0.02 1 0.00 59United Kates of America 2137 36.23 $14,530$ 31.70 59United Kates of America 2137 3	36	Norway	54	0.92	3/5	0.82
38Pakistan2 0.03 6 0.01 39Peru26 0.44 91 0.20 40Poland30 0.51 186 0.41 41Philippines16 0.27 140 0.31 42Portugal 15 0.25 126 0.27 43Qatar8 0.14 42 0.09 44Russia 35 0.59 327 0.71 45Saudi Arabia 20 0.34 83 0.18 46Slovenia1 0.02 2 0.00 47Singapore 32 0.54 410 0.89 48Spain 56 0.95 501 1.09 49South Africa 89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden 110 1.87 746 1.63 52Switzerland 98 1.66 758 1.65 53Thailand 33 0.56 245 0.53 54Taiwan 128 2.17 1.045 2.28 55Turkey 43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 $3,357$ 7.32 59United Kingdom 312 5.29 <td>3/</td> <td>Oman</td> <td>4</td> <td>0.07</td> <td>1/</td> <td>0.04</td>	3/	Oman	4	0.07	1/	0.04
39Peru26 0.44 91 0.20 40Poland30 0.51 186 0.41 41Philippines16 0.27 140 0.31 42Portugal15 0.25 126 0.27 43Qatar8 0.14 42 0.09 44Russia35 0.59 327 0.71 45Saudi Arabia20 0.34 83 0.18 46Slovenia1 0.02 2 0.00 47Singapore32 0.54 410 0.89 48Spain56 0.95 501 1.09 49South Africa89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden110 1.87 746 1.63 52Switzerland98 1.66 758 1.65 53Thailand33 0.56 245 0.53 54Taiwan128 2.17 1.045 2.28 55Turkey43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 3.357 7.32 59United Arab Emirates4 0.07 23 0.05 60Vietnam1 0.02 10 0.02 61 </td <td>38</td> <td>Pakistan</td> <td>2</td> <td>0.03</td> <td>6</td> <td>0.01</td>	38	Pakistan	2	0.03	6	0.01
40Poland300.511860.4141Philippines160.271400.3142Portugal150.251260.2743Qatar80.14420.0944Russia350.593270.7145Saudi Arabia200.34830.1846Slovenia10.0220.0047Singapore320.544100.8948Spain560.955011.0949South Africa891.517601.6650Sri Lanka10.02100.0251Sweden1101.877461.6352Switzerland981.667581.6553Thailand330.562450.5354Taiwan1282.171,0452.2855Turkey430.731920.4256Uganda10.0210.0057United States of America213736.2314,53031.7058United Kingdom3125.293,3577.3259United Arab Emirates40.07230.0560Vietnam10.0210.0061Zimbabwe10.02100.02	39	Peru	26	0.44	91	0.20
41Philippines16 0.27 140 0.31 42Portugal15 0.25 126 0.27 43Qatar8 0.14 42 0.09 44Russia35 0.59 327 0.71 45Saudi Arabia20 0.34 83 0.18 46Slovenia1 0.022 2 0.00 47Singapore 32 0.54 410 0.89 48Spain 56 0.95 501 1.09 49South Africa 89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden110 1.87 746 1.63 52Switzerland98 1.66 758 1.65 53Thailand 33 0.56 245 0.53 54Taiwan 128 2.17 1.045 2.28 55Turkey 43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 $3,357$ 7.32 59United Kingdom 11 0.02 10 0.00 60Vietnam1 0.02 10 0.00	40	Poland	30	0.51	186	0.41
42Portugal15 0.25 126 0.27 43Qatar8 0.14 42 0.09 44Russia35 0.59 327 0.71 45Saudi Arabia 20 0.34 83 0.18 46Slovenia1 0.02 2 0.00 47Singapore 32 0.54 410 0.89 48Spain 56 0.95 501 1.09 49South Africa 89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden 110 1.87 746 1.63 52Switzerland 98 1.66 758 1.65 53Thailand 33 0.56 245 0.53 54Taiwan 128 2.17 $1,045$ 2.28 55Turkey 43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 $3,357$ 7.32 59United Kingdom 1 0.02 1 0.00 60Vietnam 1 0.02 1 0.00 61Zimbabwe 1 0.02 1 0.02	41	Philippines	16	0.27	140	0.31
43Qatar8 0.14 42 0.09 44Russia35 0.59 327 0.71 45Saudi Arabia20 0.34 83 0.18 46Slovenia1 0.02 2 0.00 47Singapore 32 0.54 410 0.89 48Spain 56 0.95 501 1.09 49South Africa 89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden 110 1.87 746 1.63 52Switzerland 98 1.66 758 1.65 53Thailand 33 0.56 245 0.53 54Taiwan 128 2.17 1.045 2.28 55Turkey 43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 3.357 7.32 59United Arab Emirates 4 0.07 23 0.05 60Vietnam 1 0.02 1 0.00 61Zimbabwe 1 0.02 10 0.02	42	Portugal	15	0.25	126	0.27
44Russia35 0.59 327 0.71 45Saudi Arabia20 0.34 83 0.18 46Slovenia1 0.02 2 0.00 47Singapore32 0.54 410 0.89 48Spain56 0.95 501 1.09 49South Africa89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden110 1.87 746 1.63 52Switzerland98 1.66 758 1.65 53Thailand33 0.56 245 0.53 54Taiwan128 2.17 1.045 2.28 55Turkey43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 $3,357$ 7.32 59United Arab Emirates4 0.07 23 0.05 60Vietnam1 0.02 1 0.00 61Zimbabwe1 0.02 10 0.02	43	Qatar	8	0.14	42	0.09
45Saudi Arabia20 0.34 83 0.18 46Slovenia1 0.02 2 0.00 47Singapore32 0.54 410 0.89 48Spain56 0.95 501 1.09 49South Africa89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden110 1.87 746 1.63 52Switzerland98 1.66 758 1.65 53Thailand33 0.56 245 0.53 54Taiwan 128 2.17 $1,045$ 2.28 55Turkey43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 $3,357$ 7.32 59United Arab Emirates4 0.07 23 0.05 60Vietnam1 0.02 1 0.00 61Zimbabwe1 0.02 10 0.02	44	Russia	35	0.59	327	0.71
46Slovenia1 0.02 2 0.00 47Singapore32 0.54 410 0.89 48Spain56 0.95 501 1.09 49South Africa89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden110 1.87 746 1.63 52Switzerland98 1.66 758 1.65 53Thailand33 0.56 245 0.53 54Taiwan128 2.17 $1,045$ 2.28 55Turkey43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 $3,357$ 7.32 59United Arab Emirates4 0.07 23 0.05 60Vietnam1 0.02 1 0.00 61Zimbabwe1 0.02 10 0.02	45	Saudi Arabia	20	0.34	83	0.18
47Singapore32 0.54 410 0.89 48Spain56 0.95 501 1.09 49South Africa89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden110 1.87 746 1.63 52Switzerland98 1.66 758 1.65 53Thailand33 0.56 245 0.53 54Taiwan128 2.17 $1,045$ 2.28 55Turkey43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 $3,357$ 7.32 59United Arab Emirates4 0.02 1 0.00 60Vietnam1 0.02 10 0.02 Tatal 5.208	46	Slovenia	1	0.02	2	0.00
48Spain56 0.95 501 1.09 49South Africa89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden 110 1.87 746 1.63 52Switzerland98 1.66 758 1.65 53Thailand 33 0.56 245 0.53 54Taiwan 128 2.17 $1,045$ 2.28 55Turkey 43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 $3,357$ 7.32 59United Arab Emirates4 0.02 1 0.00 60Vietnam1 0.02 10 0.02 Total	47	Singapore	32	0.54	410	0.89
49South Africa89 1.51 760 1.66 50Sri Lanka1 0.02 10 0.02 51Sweden110 1.87 746 1.63 52Switzerland98 1.66 758 1.65 53Thailand33 0.56 245 0.53 54Taiwan128 2.17 $1,045$ 2.28 55Turkey43 0.73 192 0.42 56Uganda1 0.02 1 0.00 57United States of America 2137 36.23 $14,530$ 31.70 58United Kingdom 312 5.29 $3,357$ 7.32 59United Arab Emirates4 0.07 23 0.05 60Vietnam1 0.02 1 0.00 61Zimbabwe1 0.02 10 0.02	48	Spain	56	0.95	501	1.09
50Sri Lanka1 0.02 10 0.02 51 Sweden110 1.87 746 1.63 52 Switzerland98 1.66 758 1.65 53 Thailand33 0.56 245 0.53 54 Taiwan128 2.17 $1,045$ 2.28 55 Turkey43 0.73 192 0.42 56 Uganda1 0.02 1 0.00 57 United States of America 2137 36.23 $14,530$ 31.70 58 United Kingdom 312 5.29 $3,357$ 7.32 59 United Arab Emirates4 0.07 23 0.05 60 Vietnam1 0.02 1 0.00 61 Zimbabwe1 0.02 10 0.02	49	South Africa	89	1.51	760	1.66
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	50	Sri Lanka	1	0.02	10	0.02
52Switzerland981.667581.6553Thailand330.562450.5354Taiwan1282.171,0452.2855Turkey430.731920.4256Uganda10.0210.0057United States of America213736.2314,53031.7058United Kingdom3125.293,3577.3259United Arab Emirates40.07230.0560Vietnam10.0210.0061Zimbabwe10.02100.02	51	Sweden	110	1.87	746	1.63
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	52	Switzerland	98	1.66	758	1.65
54 Taiwan 128 2.17 1,045 2.28 55 Turkey 43 0.73 192 0.42 56 Uganda 1 0.02 1 0.00 57 United States of America 2137 36.23 14,530 31.70 58 United Kingdom 312 5.29 3,357 7.32 59 United Arab Emirates 4 0.07 23 0.05 60 Vietnam 1 0.02 1 0.00 61 Zimbabwe 1 0.02 10 0.02	53	Thailand	33	0.56	245	0.53
55 Turkey 43 0.73 192 0.42 56 Uganda 1 0.02 1 0.00 57 United States of America 2137 36.23 14,530 31.70 58 United Kingdom 312 5.29 3,357 7.32 59 United Arab Emirates 4 0.07 23 0.05 60 Vietnam 1 0.02 1 0.00 61 Zimbabwe 1 0.02 10 0.02	54	Taiwan	128	2.17	1.045	2.28
56 Uganda 1 0.02 1 0.00 57 United States of America 2137 36.23 14,530 31.70 58 United Kingdom 312 5.29 3,357 7.32 59 United Arab Emirates 4 0.07 23 0.05 60 Vietnam 1 0.02 1 0.00 61 Zimbabwe 1 0.02 10 0.02	55	Turkey	43	0.73	192	0.42
57 United States of America 2137 36.23 14,530 31.70 58 United Kingdom 312 5.29 3,357 7.32 59 United Arab Emirates 4 0.07 23 0.05 60 Vietnam 1 0.02 1 0.00 61 Zimbabwe 1 0.02 10 0.02	56	Uganda	1	0.02	1	0.00
57 Onited States of Anterea 2157 50.25 14,550 51.70 58 United Kingdom 312 5.29 3,357 7.32 59 United Arab Emirates 4 0.07 23 0.05 60 Vietnam 1 0.02 1 0.00 61 Zimbabwe 1 0.02 10 0.02	57	United States of America	2137	36.23	14 530	31.70
59 United Arab Emirates 4 0.07 23 0.05 60 Vietnam 1 0.02 1 0.00 61 Zimbabwe 1 0.02 10 0.02	58	United Kingdom	312	5 29	3 357	7 32
37 6007 25 0.03 60 Vietnam 1 0.02 1 0.00 61 Zimbabwe 1 0.02 10 0.02	50	United Arah Emirates	4	0.07	2,337	0.05
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	60	Vietnom	1	0.07	1	0.00
01 Zimbauwe 1 0.02 10 0.02 Total 5.808 100.00 45.840 100.00	61	Zimbabwa	1	0.02	10	0.00
	01		5 000	100.00	10	100.02

Table A3: Multicollinearity Check											
Variable	VIF	Variable	VIF	Variable	VIF	Variable	VIF	Variable	VIF	Variable	VIF
Firm size	1.8	Firm size	1.91	Firm size	1.73	Firm size	1.44	Firm size	1.42	Firm size	1.73
R&D intensity	1.37	R&D intensity	1.38	R&D intensity	1.37	Leverage	1.26	Leverage	1.26	R&D intensity	1.37
Board size	1.36	ESG	1.36	Board size	1.36	Board size	1.26	Board size	1.25	Board size	1.37
Current ratio	1.34	Board size	1.36	Current ratio	1.34	Current ratio	1.22	Current ratio	1.22	Current ratio	1.34
ESG composite	1.26	Current ratio	1.34	Leverage	1.26	External assurance	1.11	R&D intensity	1.09	Leverage	1.26
Leverage	1.26	Leverage	1.26	Profitability	1.25	R&D intensity	1.09	Profitability	1.08	Profitability	1.25
Profitability	1.26	Profitability	1.26	CSR report	1.2	Profitability	1.08	GRI	1.08	CSR awards	1.18
CEO duality	1.05	Free float	1.05	CEO duality	1.06	CEO duality	1.06	CEO duality	1.06	Free float	1.04
Free float	1.05	CEO duality	1.05	Free float	1.05	Free float	1.05	Free float	1.05	CEO duality	1.04
Capital expenditure	1.03	Capital expenditure	1.03	Capital expenditure	1.03	Capital expenditure	1.02	Capital expenditure	1.02	Capital expenditure	1.03
Mean VIF	1.28	Mean VIF	1.3	Mean VIF	1.26	Mean VIF	1.16	Mean VIF	1.15	Mean VIF	1.26

VIF: Variance Inflation Factor