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Manager's Dilemma: Stockholders' and Consumers' Responses to Corporate Environmental Efforts

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Academic Editor: Fabio Carlucci

Received: 23 May 2017; Accepted: 23 June 2017; Published: 26 June 2017

Abstract: This study aims to reveal that different stakeholders have different environmental preferences by demonstrating the managers' dilemma of selecting an appropriate environmental strategy to achieve firms' corporate goals. It analyzes the effects of firms' efforts in environmental impact through actual environmental practices and environmental considerations in environmental management on stockholders' and consumers' responses by using the Newsweek Green Rankings 2012 for large US-based firms. The study uses the event study methodology and the ordinary least squares multivariate regression model conditioned with relevant firm and industry-specific characteristics. The results indicate that both stockholders and consumers appreciate corporate efforts in reducing environmental damage; however, consumers exhibit a significant and negative response against firms' environmental management efforts. The conflicting results provide valuable insights into the alignment of environmental efforts for developing core competencies that lead firms toward sustainability. Further, this research makes a valuable contribution to the existing literature and provides guidelines for the formulation of public policies that encourage corporate environmental efforts to ensure simultaneous development of business and society.

Keywords: corporate environmental performance; creating shared value; stakeholder; sustainable development; stockholder expectation; consumer response

1. Introduction

The global rise in environmental consciousness demands that firms reorient their corporate strategies to not only comply with environmental regulations, but also make themselves sustainable by fully incorporating environmental, social, and governance factors into their financial and decision-making processes [1]. The strategic approach is reinforced by the evolving concept of Creating Shared Value (CSV) that describes, "Policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates" [2]. Academia has indicated an increasing interest in the sustainable development of firms, which has produced several studies that investigate the effects of corporate environmental efforts. While examining the economic repercussions of corporate environmental efforts, focus has been limited to the evaluation of either consumers' responses or stockholders' expectations of corporate social activities [3–9]. Consumers' and stockholders' perceptions of an environmental strategy may vary greatly depending on their behavior, attitude, trust, exposure, and so on, and as such, it may yield inconsistent results [10,11]. This study simultaneously evaluates firms' corporate environmental efforts from the perspectives of both consumers and stockholders. In doing so, it sheds light on the

manager's dilemma in developing a corporate strategy, thus providing a leading thread to academia for future research on the strategic issue of environmentalism.

Firms are emerging as one of the foundations of modern global society and they are expected to conduct business in a manner that reflects society's shared values in terms of their moral, legal, and economic aspects such that both society and the firms prosper simultaneously. As such, a manager's responsibility extends beyond the conventional, that is, the maximization of stockholders' wealth, to a greater responsibility involving the maximization of social welfare [2]. Therefore, managers consider society's shared values along with government regulations when devising corporate strategies. Two of the major stakeholders, consumers and stockholders, constantly scrutinize firms' corporate behaviors on the basis of their "social goods," which, being a function of both individual and cultural values, often differ dramatically within and among groups, nations, cultures, and market segments [12]. Consumers and stockholders may have many common expectations of corporate attitude toward environmentalism; however, stockholders may possess additional concerns related to achieving a greater investment value. In addition to retrieving the publicly-available information on firms' corporate environmental behavior, consumers may find cost-ineffective searches of firms' in-depth environmental practices, which may be well-compensated in the case of stockholders. The study contends that the interaction of consumers' and stockholders' demands for environmentalism, which differ for both these stakeholders, have profound effects on the formulation of corporate strategies.

Research on management of businesses suggests that firms' strategic response to challenges determine their success and failure [13]. As such, managers adopt a combination of short-term and long-term approaches for corporate environmental initiatives. Moreover, different stakeholders may have different preferences and needs as regards corporate environmental initiatives, which depend on the stakeholders' attitude, ethical and moral behavior, and awareness of the global cause. These have been thoroughly addressed as factors that affect environmental responsive behavior in prior research [14,15]. Further, the level of environmental deterioration in and around a society may indicate the strength of stakeholders' demands for corporate environmental efforts. With such a wide range of determinants, there is no straightforward or one-size-fits-all approach for a manager to undertake in corporate environmental strategy. Thus, an important research question arises for every corporate environmental action to evaluate from both consumers' and stockholders' perspectives, which is related to a firm's corporate environmental strategy of improving environmental conditions and working toward sustainable growth.

This study utilizes the Newsweek Green Rankings 2012 to analyze firms' environmental actions. The Newsweek Green Rankings 2012 provides an independent evaluation of the environmental approaches of large US-based firms across two dimensions, environmental impact through actual environmental practices and environmental considerations in policy or management. The data is publicly available on both offline and online media in a simple and easily interpretable format that supports the appropriateness of the analysis of the impacts of firms' environmental efforts [16]. The study utilizes the event study method to estimate stockholders' responses and applies the ordinary least squares (OLS) multiple regression model conditioned with firm- and industry-specific characteristics to examine the significance of firms' environmental efforts on consumers and stockholders. By examining corporate environmental efforts of large US-based firms, we find consumers and stockholders appreciating firms' endeavors to mitigate environmental damage through environmentally-friendly operations, such as the reduction of greenhouse gas emissions, energy usage, water usage, and waste disposal. The results are consistent with the hypothesis of creating competitive advantage through environmental innovations that have a positive influence on environmental protection [17–20]. However, we find a conflicting response from consumers, who are underwhelmed by firms' environmental management efforts. The stockholders do not indicate any significant response to such managerial actions, but consumers indicate a significant and negative response and, thus, punish the firms that expect to fulfill environmental obligations by limiting their efforts in environmental management to programs and policies, targets, and certifications. The results clearly imply that

consumers, who may reflect an unbiased evaluation of firms' environmental actions, are against the efforts that do not contribute directly toward improving environmental conditions. However, both consumers and stockholders encourage firms to invest in improving business operations that reduce environmental damages. Additionally, evaluating firms' environmental efforts from the perspectives of two important stakeholders, this study also provides valuable information for managers to help devise environmental strategies that make a difference in improving the environment. Moreover, it also points out the expectation variance among stakeholders, which challenges corporate strategists to select environmental protection measures carefully for achieving the firm's goals. Further, it extends the literature on environmental management by uniquely analyzing the impacts from both the consumers and the stockholders' perspectives simultaneously.

The remainder of the paper proceeds as follows. The following subsection reviews the literature on environmental management and states the research hypothesis, with a focus on motivational variations and the related expectations of consumers and stockholders. The second section describes the empirical specifications of the methodology, illustrating data, variables, and the sample. The empirical results and findings are discussed in the subsequent section. Finally, the discussion and conclusion section elaborates the outcomes and provides the summary and implications of the research.

Relevant Literature and Hypothesis Development

The resource-based view of strategic management literature suggests the success of a corporate firm depends on its ability to create resources of strategic value, such as unique, scarce, inimitable, durable, non-substitutable, that help the firm to generate competitive advantages over its rival firms [21–23]. The stakeholder theory broadens of concept of strategic management by integrating the interests of shareholders, employees, customers, suppliers, communities, and other groups into corporate strategy to ensure the long-term success of the firm [24,25]. Value-Based Management reinforces the firm to operate in a socially responsible manner that encompasses the importance of all its stakeholders such that they contribute to creation of sustainable value to the firm, thus providing a win-win situation for both the stockholders and other stakeholders [26].

Increasing environmental awareness challenges managers to align their firm's policies and operating practices with the evolving concept of CSV, which enhances firms' competitiveness and uplifts the economic and social conditions of the society in which it operates [2]. Ortas et al. [7] claim that firms that adopt environmental, social, and governance (ESG) principles require an organizational change that fosters stakeholder engagement which, in turn, contributes towards the firm's development through financial and non-financial incentives. Ferreri-Ferrero et al. [8] highlight the generation of consistent competitive advantage in the ESG dimensions providing an intangible value that enhances firms' corporate financial performance. Several other research studies have recommended firms to develop core competencies and inimitable resources through environmental strategy so that they can sustain their competitiveness [20,25,27–29]. However, as pointed out by Bergmann [30], a firm's obligation to meet short-term profitability is a hindrance to achieving the goal of sustainable development. Moreover, managers usually lack resources and, thus, find it advantageous to adopt a combination of short-term and long-term approaches for corporate environmental initiatives.

Many studies have analyzed the effects of corporate environmental initiatives by gathering evidence on whether they pay off. Puopolo et al. [9] study Newsweek's green indicators on financial returns and demonstrate no linear relationship between adoption of green standards and financial returns, suggesting the implementation of environmentally-friendly standards a new phenomenon that investors have yet to acquire enough awareness to react in the stock market. A review of several prior studies indicates conflicting and inconclusive findings for the relationship between firms' social initiatives and their financial performances [31–33]. Such inconsistent findings are often attributed to both theoretical and methodological issues; and environmental strategies are argued as a cost, as well as a benefit to firms [25]. A recent analysis of more than 2000 previous empirical research indicates overall positive effects of environmental initiatives on firm's financial performance [34]. Similarly, a

qualitative research through expert interviews emphasizes the direct and indirect positive impacts of corporate environmental performance on corporate financial performance [30].

Moreover, consumers give a mixed response to consumption of environmentally-friendly products. Ottman [35] indicates that a large proportion of consumers perceive inferiority through observable and product-specific information and they reduce the purchase of such products accordingly. On the other hand, several other studies highlight the consumers' willingness to pay a premium for the additional satisfaction derived from the consumption of environmentally-friendly products, which often helps penetrate into an evolving market of environment-conscious consumers [3,36–38]. By reviewing the literature pertaining to environmentally-responsible behavior, Fransson and Gärling [39] point out the knowledge, internal locus of control, personal responsibility, and perceived threats to personal health as important factors that shape an individual's response to a firm's environmental actions. Similarly, Davis [10] and Lee et al. [11] suggest that consumers' existing knowledge of a firm's environmental concerns interacts with new corporate environmental information that determines their response to corporate efforts. Several research papers document the importance of information disclosure and marketing of environmental initiatives in establishing a brand reputation that positively appeals to consumers [14,40]. Therefore, managers give great importance to the consumers' aspirations when formulating corporate environmental initiatives.

Managers usually lack resources to take into account any other factor besides the rational economic ones when formulating corporate strategies. This leads to attempts to find a balance that satisfies various stakeholders. However, their major concern revolves around satisfying the expectations of consumers and stockholders with corporate environmental initiatives that enhance their ethical corporate image and lend credence to their environmental innovation in generating sustainable competitive advantage and ensuring environmental protection [41]. A large number of research studies focuses on firms building their corporate ethical images and reputations in the market, which influences both stockholders and consumers [3,37]. Although, stockholders and consumers may have a large set of common expectations, stockholders have an incentive to scrutinize a firm's environmental actions more thoroughly to realize a valuable investment. Such disparities necessitate the investigation of corporate environmental strategy simultaneously from these stakeholders' perspectives. Accordingly, this study hypothesizes whether a "one-size-fits-all approach" as regards corporate environmental strategy helps firms achieve their goals by analyzing both consumers' and stockholders' responses.

Hypothesis. *Corporate environmental efforts positively/negatively influence stockholders/consumers.*

2. Materials and Methods

2.1. Methodology

The main aim of this study is to investigate the effects of corporate environmental actions through consumers' and stockholders' responses to seek an effective approach for a firm's sustainability. It employs the event study method, which is a widely-used research methodology in finance and is increasingly being used in fields such as management, marketing, and accounting, to estimate the impacts of firms' environmental efforts through their stock performances. The event study measures market returns associated with a specific event through an abnormal stock return that accounts for the deviation of the actual market return from the expected return. Similarly, the impact of firms' environmental actions on consumers is estimated through the immediate sales growth in the following fiscal year, which fairly reflects consumers' perception of firms' recent activities [42]. The study applies the multivariate OLS regression model after controlling for firm and industry-specific characteristics to evaluate the significance of firms' environmental approaches to the two stakeholder groups: consumers and stockholders.

2.2. Measurement of Environmental Actions

Quantifying environmental considerations in a firm's corporate strategy is a complex issue. This study utilizes the Newsweek Green Rankings 2012, which publishes the environmental performance of the largest 500 publicly-traded US-based firms by revenue, market capitalization, and number of employees. The principal reasons for selecting the 2012 publication of Newsweek's data are consistency and quality of data. Two leading environmental research providers, Trucost (Newsweek Green Rankings 2012: "Trucost specializes in quantitative measurements of environmental performances and holds the most extensive data available on corporate environmental impacts . . ." [43].) and Sustainalytics (Newsweek Green Rankings 2012: "Sustainalytics is known for its credible and independent environmental, social, and governance (ESG) analysis and its vast universe of research coverage..." [43]), collaborated with Newsweek to assess each firm's environmental actions to provide an independent evaluation of the firms' environmental performances. The firms were evaluated based on their environmental actions using the methodology that was adopted in 2011. As the resulting environmental scores were announced around the same time of the third quarter in both the years, it not only ensures consistency and quality of the data used in the evaluation, but also provides the stakeholders a steady understanding of the firms' environmental activities. This environmental information on the firms was made public through both offline and online media in a simple, readily-available, and easily-interpretable format, thus making this data suitable for our research study (Fung et al. [44] identified clarity and standardization as being essential for effective transparency of disclosed information in a review of several disclosure schemes. Moreover, the disclosure of environmental information is found most effective by investors when it is presented to them in a comparative manner with a simple and easily interpretable form that reflects the underlying performance differences [45,46]).

The environmental research providers assessed each firm's environmental footprint, the management of that footprint, and transparency with the help of a large number (more than 700) of environmental indicators and assigned two basic component environmental scores, Environmental Impact Score (EIS), and Environmental Management Score (EMS). The environmental performance scores, EIS and EMS, which are standardized scores on a scale with a maximum of 100-points, are considered in this study for the purpose of finding consumers' and stockholders' responses to the environmental actions and initiatives taken by the firm.

As defined in Newsweek Green Rankings 2012: Full Methodology [43], the EIS is a comprehensive, quantitative, and standardized measurement of the overall impact of a firm's global operations. It includes more than 700 environmental indicators including emissions of greenhouse gases, water use, and solid-waste disposal. The quantity of each environmental impact is established using high quality publicly disclosed environmental data, Trucost's proprietary economic input/output model in absence of comprehensive data, and a benchmarking system to fairly assess the impacts of companies operating in more than one industry. Each impact is multiplied by an environmental cost that Trucost has developed from valuation studies and other academic literature to estimate the environmental-damage cost—a dollar value of the potential cost to society of resulting damage to the environment. The costs are summed to establish the firm's total environmental impact, which is normalized by revenue to account for the firm's size and expressed on a 100-point scale reflecting higher EIS for firm with lower cost [43].

The EMS reflects a firm's management of its environmental performance through programs, policies, targets, certifications, and so on across three distinct spheres of influence—a firm's operations, contractors and suppliers, and products and services. The EMS reflects more than a dozen core environmental indicators, such as emissions reduction and use of renewable resources, as well as more than 40 sector-specific indicators, such as biodiversity protection, water use, hazardous-waste reduction, and a range of sustainability-related products and services. The methodology is underpinned by Sustainalytics' best-of-sector approach to benchmarking firm performance relative to industry peers. It involves a thorough examination of firm's documents, media sources, online

databases, government, and other industry sources. For a firm to score 100 on EMS, it requires disclosure of firm-wide policies, management systems, and certifications that are aligned with the industry's best practices [43].

2.3. Measurement of Stockholders' Response

Stock prices are the best and most unbiased estimates of firm value [47] and any change in them reflect stockholders' expectations of a firm's present value with respect to its future performance. The efficient market hypothesis suggests that stockholder's response to any new information is immediately reflected through stock price movement. Accordingly, stockholders' responses to Newsweek's announcement of firms' environmental scores were measured through abnormal stock returns around the time of the announcement using the event study methodology. Newsweek announced the environmental scores on the pre-declared date of 22 October 2012. Considering stockholders' behavior, which quickly captures new information on stock prices, a short event window of three days (Day -1 to Day $+1$) was defined to analyze the cumulative abnormal returns (CAR) associated with the announcement of environmental scores. To avoid any contamination due to overlapping of events, the LexisNexis Academic database was examined for each sample firm for one day on either side of the event window to identify any news that could influence the stock returns; those sample firms were removed from the analysis [48].

The daily adjusted closing stock price (SP) and S&P500 index was retrieved from the Center for Research in Securities Pricing (CRSP) to provide -251 to $+10$ daily stock returns for each sample firm, where the numerals indicate the date from the day the environmental scores were announced (22 October 2012). The stock returns for each sample firm was calculated by subtracting one from the ratio of the stock price on day t to that on the previous day, that is $t-1$: $(SP_t/SP_{t-1} - 1)$. A clustered event like the disclosure of environmental information for all the sample firms on the same day introduces considerable downward bias in the standard deviation, thus overstating the t -statistics and causing an over-rejection of the null hypothesis of zero-average abnormal returns when it is true [49]. To control the cross-correlational bias, Kolari and Pynnönen [49] suggest using standardized cumulative abnormal returns (SCAR) to examine the statistical significance of the correlation between the event and the stockholders' responses, which rectifies the issue of over-rejection [50]. Accordingly, SCAR ($-1, +1$) was estimated for each sample firm using Aybar and Ficici [51] method of dividing the CAR by the corresponding standard deviation.

2.4. Measurement of Consumers' Response

There is no straightforward way to estimate consumers' responses to a particular strategy or event. Prior research qualitatively analyzes consumers' attitudes and behaviors toward firm's corporate social behaviors [4,5]. Many studies emphasize the several theoretical linkages of social and environmental efforts to enhance firms' performance and examine the effects on firm's profitability and market value [3,6–8]. The financial performance of a firm largely depends on its sales, which ultimately reflects the consumers' response. Generally, sales depend on several factors, such as consumers' perceptions of price, quality, market competition, regulation, consumers' demographic characteristics and the firm's reputation. Moreover, consumers' perceptions of corporate social initiatives influence their beliefs, attitudes, and intentions [52]. Therefore, any change in immediate sales could reflect consumers' perceptions of the firm's recent activities. In particular, when estimating consumers' perceptions of a firm's environmental actions, the argument places reasonably high importance on the fact that sales growth captures a fair amount of publicly-available information [20]. This study estimates consumers' responses through sales growth in 2013 with respect to the firm's environmental scores announced in the Newsweek Green Rankings 2012. The model includes the previous year's sales (lagged sales) as a control variable to capture the presence of some inertia of a direct relationship due to the time series properties of sales.

2.5. Control Variables

Following prior studies, the analysis includes firm and industry-specific characteristics in the investigation model as major control variables that may influence the sales or stock performance [20,53]. Firm size is measured by the natural logarithm of total assets, and the debt ratio is calculated by the ratio of the sum of total debt in current liabilities and long-term debt to the total assets. Accordingly, firms are classified into five industry categories under the broad global industry classification standard (GICS) and the industry classification benchmark (ICB): Consumer Goods, Consumer Services, Industrials, Technology and IT Services, and Energy. These categories are used as dummy variables to condition the empirical model with industry-specific effects [20]. The industry dummy takes a value of 1 if the firm is in a related industry and 0, otherwise. The fiscal year financial data was obtained from COMPUSTAT for all sample firms for the years 2012 and 2013 and sales growth was determined by the ratio of total revenue in 2013 to that in 2012.

2.6. Sample

To derive the appropriate sample from the Newsweek Green Rankings 2012, all financial firms (52) and real estate firms (four) were removed due to significant variations in the definitions of variables that may have different implications on firm performance relative to industrial firms. Firms without stock price information (13 firms) and those with overlapping events (15 firms) were also discarded. After eliminating 50 firms with incomplete financial information from COMPUSTAT, the final sample comprised of 366 firms with a complete set of information for examining the effects of the firms' environmental efforts on consumers and stockholders.

3. Results

3.1. Descriptive Statistics

Table 1 presents the descriptive statistics, illustrating the firm and industry-specific characteristics of the sample firms with regard to environmentalism. Firms are similar in terms of size and capital structure across industries. On average, they have a slightly higher mean EIS than EMS, which indicates the firms' emphasis on reducing environmental damage through their business operations. The consumer service industry has the largest EIS, while the technology and IT service industry has the largest EMS. On the other hand, the energy sector makes the lowest environmental efforts in terms of both the EIS and the EMS.

Table 1. Descriptive statistics of Newsweek's 2012 green ranked firms.

Industry	Number of Sample Firms	EIS	EMS	Firm Size [Ln(Assets)]	Debt Ratio
All (Full Sample)	366	55.57 (56.70)	53.93 (53.20)	9.52 (9.40)	0.27 (0.25)
Consumer Goods	44	46.43 (47.05)	52.59 (53.75)	8.89 (8.74)	0.29 (0.30)
Consumer Services	101	65.35 (64.50)	52.48 (51.60)	9.41 (9.26)	0.28 (0.23)
Industrial Goods	106	51.62 (52.45)	54.72 (54.10)	9.41 (9.24)	0.29 (0.26)
Technology & IT Services	87	56.84 (62.2)	58.60 (59.00)	9.85 (9.72)	0.25 (0.25)
Energy	28	45.65 (49.70)	43.05 (43.90)	10.33 (10.34)	0.23 (0.21)

The mean (median) values are reported.

The environmental impact and management scores of all of Newsweek's Green Ranked firms indicate a significant negative correlation between the EIS and the EMS ($r = -9\%$, $p = 0.0474$, sample = 487, results not reported). It highlights a divergence in corporate environmental approach and may suggest that a firm's efforts in increasing the EIS adversely affect its efforts to increase the EMS, and vice versa. However, the EIS and the EMS of the sample firms do not have any significant correlation between them, but they exhibit a significant association with the dependent variables, thus supporting the argument that firms' environmental activities influence their stakeholder's responses.

Table 2 provides the Pearson's correlation coefficients between the environmental scores (EIS and EMS) and financial variables (sales growth, firm size, and debt ratio) of the sample firms. These findings are consistent with the prior literature [3,6,14]. Overall, the correlation coefficients do not indicate any strong evidence of multicollinearity among the independent variables.

Table 2. Pearson's correlation coefficients.

	SCAR (−1, +1)	Sales Growth	EIS	EMS	Firm Size	Debt Ratio
SCAR (−1, +1)	1.0000					
Sales Growth	0.0264 (0.6151)	1.0000				
EIS	0.1161 ** (0.0264)	0.1812 *** (0.0005)	1.0000			
EMS	−0.0188 (0.7195)	−0.1280 ** (0.0143)	−0.0123 (0.8140)	1.0000		
Firm Size	−0.1442 *** (0.0057)	−0.0381 (0.4678)	−0.1347 *** (0.0099)	0.2471 *** (0.0000)	1.0000	
Debt Ratio	−0.0302 (0.5640)	−0.0292 (0.5773)	−0.1658 *** (0.0015)	−0.0959 * (0.0668)	0.0184 (0.7258)	1.0000

N = 366. The *p*-values are in the parenthesis. The significance levels are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

3.2. Stockholders' and Consumers' Responses to Corporate Environmental Actions

The expectations of stockholders and consumers of corporate environmental actions were separately analyzed for two measurements of corporate environmental actions, EIS and EMS on SCAR and sales growth. The empirical results are reported through univariate and multivariate analyses.

3.2.1. Univariate Analysis

Table 3 summarizes the mean effect of the firms' environmental actions on stock performance and sales growth. On average, the SCAR (−1, +1) shows +0.182% at 1% significance ($p = 0.0093$), indicating stockholders' positive response to the firms' environmental information demonstrating their willingness to pay a higher price for such these stocks. Other wider event windows were also examined for abnormal returns of these stocks. The five-day event window [SCAR (−2, +2)] indicates a statistically significant and positive mean, but it is smaller than the mean for the three-day event window. Further larger windows do not indicate any significantly abnormal returns. The results provide strong evidence in support of the integrity of the data for a research study; it fairly explains that there was neither an information leakage before the public announcement nor a slow propagation of information after it. The market observes abnormal returns to these stocks for a narrow window, which is most likely due to the pre-informed date of information disclosure; environmentally-conscious investors would react to the environmental approaches of the firms as soon as they learn about them. The results provide strong evidence in support of stockholders' expectations of improved firm performance [3,6], which is evident from a highly significant average sales growth of about +3.78% ($p = 0.0000$). The statistically significant positive sales growth may not indicate a direct relationship with the environmental efforts, but clearly reflects consumers' positive responses to the firms' recent activities.

Table 3. Univariate analysis.

Measurement Variable	Mean (Median)	Median	T-Test <i>t</i> -Statistics	Wilcoxon Signed Rank Test <i>z</i> -Statistics
SCAR (−1,+1)	0.1819 ***	0.2716	2.6145 (0.0093)	3.161 (0.0016)
SCAR (−2, +2)	0.0198 **	0.0169	2.4454 (0.0149)	8.829 (0.0000)
Sales Growth	0.0378 ***	0.0227	5.8060 (0.0000)	6.134 (0.0000)

Mean and median values are reported. The *T*-test (*t*-statistics) and Wilcoxon signed rank test (*z*-statistics) indicate the significance of non-zero mean and median value, respectively. The *p*-values are in the parenthesis. The significance levels are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

In summary, the results indicate a possible linkage between firms' environmental initiatives and the responses of consumers and stockholders. Therefore, a more rigorous cross-sectional investigation is deemed necessary to demonstrate the relationship in a multivariate framework that is conditioned with relevant firm and industry-specific effects.

3.2.2. Multivariate Analysis

The previous section reports an association between firms' environmental actions and stakeholders' responses, which indicates their positive attitude towards environmentalism. This section reports the key analysis of stockholders' and consumers' expectations of corporate environmental actions using a multivariate OLS regression model, while controlling for firm and industry-specific characteristics with a full sample of 366 firms. The results indicate a reasonably low mean variance inflation factor, asserting that there is no issue of multicollinearity in the models. The *F*-statistics are highly significant and they confirm the validity of the models, thus suggesting the appropriateness of independent variables that explain a significant portion of the variability in the dependent variable.

Table 4 summarizes the results of the multivariate regression, which elaborates stockholders' and consumers' perceptions of two different environmental approaches measured by the EIS and the EMS. Both groups of stakeholders appreciate the firms' efforts in minimizing environmental damage through their business operations. They demonstrate different perceptions with regard to efforts in environment management activities.

Table 4. Multivariate analysis of SCAR (−1, +1) and sales growth on corporate environmental efforts.

Variables	Dependent Variable: SCAR (−1, +1)	Dependent Variable: Sales Growth
EIS	0.0105 ** (0.016)	0.0016 *** (0.000)
EMS	0.0012 (0.829)	−0.0014 *** (0.007)
Firm Size	−0.1943 *** (0.004)	0.0188 ** (0.016)
Debt Ratio	−0.0101 (0.976)	−0.0229 (0.488)
Lagged Sales		−5.38 × 10 ⁷ *** (0.005)
Constant	1.5401 ** (0.046)	−0.8379 *** (0.000)
Industry dummy	Included	Included
Number of samples	366	366
<i>F</i> -statistics	5.87 *** (0.000)	3.40 *** (0.001)
VIF statistics	4.33	3.97
Adjusted R ²	0.0964	0.0558

The *p*-values are in parentheses. The significance levels are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

The EIS indicates a significant and positive coefficient (0.0105, *p* = 0.016) with SCAR (−1, +1), which is the stockholders' response, suggesting that firms with a higher EIS are more favorably valued in the stock market. This finding is consistent with the prior literature [3,6,37], reflecting better environmental performance associated with higher firm value. It supports the prior literature on firm gaining ethical environmental reputation by improving environmental performance [3]. Further, the EIS has a significant and positive association (0.0016, *p* = 0.0000) with sales growth, suggesting that consumers appreciate firms' efforts in minimizing environmental damage through

their business operations. This finding is also consistent with the prior literature [3,37,54] that documents firms enhancing financial performance through revenue gains from increased sales. Environmentally-differentiated products help firms to not only increase their market share, but also extend their market footprints to the evolving environmentally-conscious consumers, who gain additional satisfaction from the environmental attributes of products, for which they are willing to pay a premium [25,37,38].

Moreover, the EIS reflects a firm's propensity toward a sustainable environment through proactive initiatives, such as greenhouse gas reduction, water management, energy minimization, and waste disposal. All such activities can be achieved through environmental innovation and process improvement that give the firm a competitive advantage based on the CSV, which positively influences both stockholders and consumers. The EMS does not indicate any significant association with the stockholders' responses. The stockholders' indifferent responses to the EMS, but statistically-significant association with the EIS, clearly indicate their outlook on promoting sustainability by developing environmental competence.

Importantly, consumers demonstrate a statistically significant and negative relationship with the EMS ($-0.0014, p = 0.0007$), punishing firms that attempt to comply with environmental obligations by merely developing programs and policies for environmentalism. The negative consumers' response consists of a sales decrease with increasing EMS. Prior literature suggests that firms observe negative financial performance when they attempt to differentiate through environmental compliance and certification [55,56]. Similarly, there are several existing studies suggesting that consumers build negative perceptions against firms' social involvement that they find insincere and, accordingly, punish the firms [57]. Ellen et al. [4] and Becker-Olsen et al. [52] demonstrate consumers responding negatively to efforts perceived as self-interested motives (e.g., increasing sales, profits, and improving corporate image), whereas self-less motives for value-driven and strategic approaches are perceived positively. The EMS indicates how a firm manages its environmental obligations through program, policy, targets, and certifications that environmentally-conscious consumers may perceive as mere compliance efforts that need to be redirected toward contributing toward the sustainability of the environment.

The analysis of two environmental approaches clearly indicates contrasting perceptions of stockholders and consumers. Both stockholders and consumers demonstrate positive perceptions of firms' efforts towards increasing EIS. The EMS reflects statistically indifferent impact on stockholders, but negatively influences consumers resulting in a decline in sales. The market reaction to EMS reflecting the skepticism of the financial market and the negative perception of the consumer market raise concerns whether they are due to wrong corporate decisions or a lack of sufficient corporate communication about EMS.

In order to cross-examine the results, we performed an alternative investigation using the firms that repeatedly showed up in the Newsweek's Green Rankings in two successive years, 2011 and 2012. The results were consistent with slightly improved coefficients, thus supporting the findings (results are not reported). It also confirms that firms' commitment through consistent environmental efforts constitutes an intangible value ensuring stakeholders' positive attitudes that leads to improvements in corporate performance [8,20].

4. Discussion and Conclusions

Sustainability is a top priority of corporate firms that incorporate social, environmental, and economic factors into their corporate strategies for greater progress. Several academics have investigated firms' environmental efforts and examined their consequences from either the investors' perspective or consumers' perspective [3–9]. This study suggests that different stakeholders may have different environmental preferences, and stockholders and consumers, who represent two different groups of stakeholders, may respond differently to firms' environmental initiatives. Further, it examines stockholders' and consumers' responses to environmental efforts, which are measured based on two dimensions, environmental impact and environmental management. The study

demonstrates that both stockholders and consumers appreciate corporate strategies and firms' efforts at reducing environmental damage and producing long-term positive impacts. However, it finds that consumers exhibit a significant and negative reaction toward environmental management efforts for short-term influences.

Corporate strategies inevitably incorporate environmental considerations aimed for short and long-term impacts. Managers are often faced with limited resources to allocate for environmental considerations in corporate strategies. One of the major roles of managers is to differentiate the creation of firms' corporate image of being environmentally-friendly in a competitive market environment. For several reasons rooted in stakeholders' individual expectations, or arising from regulatory requirements, managers more often than not need to undertake a combination of short-and long-term environmental strategies. Thus, this study exposes the dilemma of managers in shaping firms' environmental behavior and indicates the need for more rigorous future studies to achieve the corporate goal of sustainability.

Both stockholders and consumers exhibit a positive response toward the EIS, which implies the need for firms to invest in environmental innovation and modify their business operations to reduce the environmental damage. A high EIS indicates process improvement strategies by the firms through environmental considerations in business operation processes, which can be perceived by both stockholders and consumers as proactive initiatives, thus leading to an improvement in their beliefs, attitudes, and intentions [52]. By doing so, firms develop a unique resource for gaining and sustaining competitive advantage [20,21,27,58], which, according to both the groups of stakeholders, is necessary for achieving sustainability (Yadav et al. [6] argue for investor expectations of improved financial performance and intangible benefits that a firm may obtain by becoming a strong environmental performer and demonstrate increased firm value through consistent improvement of corporate environmental performance. A strategic corporate environmental effort also empowers employee morale and creates a culture of innovation and collaborative relationships among stakeholders resulting in developing unique resources that helps a firm to have a persistence of superior performance [58,59]. In addition, Yadav et al. [20] provide evidence of firms obtaining competitive advantage through consistent improvement in corporate environmental performance that allows a firm with superior performance to sustain its competitive advantage, and complements the efforts of a poorly-performing firm to quickly recovering from inferior financial performance). The argument is consistent with several prior studies that have documented firms improving financial performance, gaining market share, providing additional satisfaction to consumers for a market premium, building an environmental reputation, and significantly reducing the risk of environmental lawsuits and consumer boycotts [3,37,60,61].

However, consumers exhibit a significant and negative response toward the EMS and punish those firms that focus on increasing it. Consumers' expectations of firms fulfilling environmental obligations go beyond the efforts to cultivate a norm of environmental management through programs and policies. Any effort toward simply following the environmental regulations may not contribute to the improvement of environmental conditions. Several prior studies, such as [55,56], document the negative perception of firms joining international environmental agencies to obtain environmental certifications. Such managerial efforts are not effective enough to influence consumers, who perceive any effort toward building a corporate environmental image by merely complying with environmental regulations or for-profit-motivated initiatives negatively [52].

From the perspective of either resource availability or regulatory requirement, managers usually encounter several constraints, such as limited resources, time constraints, regulation requirements, and market competition, thus, compelling them to adopt a combination of corporate environmental strategies to achieve the firm's goals. This study analyzes two types of environmental approaches of firms with respect to two major stakeholders, stockholders, and consumers, who have different perceptions of firms' environmental efforts. The contrasting perceptions further deteriorate the manager's decision-making process, thus leading to a dilemma in selecting an environmental approach

for the firm. Moreover, besides the negative response of consumers against the environmental management approach of firms, the findings of this study also indicate that environmental efforts directed toward achieving a long-term effect, such as reducing environmental damage, have positive impacts on both stockholders and consumers. It provides clear and valuable information to managers for adopting innovative process improvement strategies that eventually develop unique resources in the firm; thereby, helping gain sustainable competitive advantage [20,21,27,58]. Such environmental initiatives will reflect the idea of CSV, such that it simultaneously benefits both firms, as well as the societies in which they operate, by improving its environmental conditions, thus leading the firm toward sustainability [2].

The study has important implications for academics, practitioners, and policy-makers. It extends the literature on environmental management by uniquely analyzing its impacts on stockholders and consumers and providing valuable insights into corporate strategy. The results provide empirical evidences in the form of expectation variance between stockholders and consumers, which managers may find useful in developing corporate strategies to achieve the firm's goal. Policy-makers will also find the outcomes of this study very useful in formulating environmental regulations that encourage firms to incorporate the idea of CSV into their strategies. However, the findings of this empirical study are subject to cautious interpretations in the light of potential limitations, which might encourage future research. The results of this study might be limited due to the use of Newsweek's methodology for the evaluation of firms' environmental efforts. Another limitation is that the study relies on the analysis of impacts only in the case of large US-based firms for one year. Extending the dataset to include a wide range of firms from different regions with a longer time period will yield robust results and enhance the quality of analysis for the purpose of generalization.

Acknowledgments: The authors would like to acknowledge financial support provided by the Global Research Network program through the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2016S1A2A2912421) as well as by the Polish Ministry of Science and Higher Education, Grant for Young Researchers. The authors wish to express gratitude to two anonymous reviewers for their insightful comments and suggestions.

Author Contributions: This work is an outcome of joint efforts of the three authors. Seung Hun Han provided research materials and analysis tools, and contributed in interpretation of the results. Hohyun Kim reviewed the related literature, compiled the data, and analyzed the results. Prayag Lal Yadav conceived the research idea, and analyzed and interpreted the results. All authors provided contribution on conclusion and implications of the research. All three authors wrote the manuscript, thoroughly read, and approved the final version.

Conflicts of Interest: The authors declare no conflicts of interest pertaining to this research work.

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