Chapter 7
Inclusion of ESG Factors in Investments and Value Addition: A Meta-Analysis of the Relationship

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Abstract The research explores the impact of ESG factors on investments by conducting a global study considering 100 academic papers dealing with the interlinkage between ESG factors and financial performance. The papers are selected using Cochrane methodology across different geographical domains over a time period of 1990–2015 and analyzed using a meta-analytic approach. The idea was not only to assess the relationship between sustainability and financial performance but also to decipher the impact of different control variables on the relationship. The results emphasize the positive impact of ESG factors on financial performance.

Keywords Sustainability · ESG · Responsible investment · Finance

7.1 Introduction

Over the past decade, there has been an increased growth of responsible investments around the world, resulting in a multitrillion dollar market in the developed countries [1]. A slow transition has been witnessed from the emergence and growth of ethical investments to socially responsible or responsible investments (SRI or RI) and still further to environmental, social and governance (ESG) investing. The fundamental motivation behind these investments has changed from being philanthropic to material, keeping in mind the financial profitability of such investments. Unlike the conventional investments, SRI funds apply a set of screening norms, involving both positive and negative screens based on certain indicators such as environmen-

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tal, social and governance factors. The study intends to find an answer to the vital question, i.e., whether it is possible to perform good by doing good. Simply put whether SRI or ESG investments lead to financial and market value addition of business portfolios. Hence, in this paper we have attempted to decipher the financial impact of the inclusion of ESG factors in investments. Several academicians have resorted to empirical studies both at the company and at the portfolio levels to assess the impacts. The authors from several studies have adhered to fund analysis, firm-level analysis and analysis of the sustainable indices, to test the performance of the sustainable funds vis-à-vis their conventional counterparts using several financial models such as capital asset pricing model (CAPM), Carhart's alpha, matched pair, multifactor and multivariate regression models. For establishing the relationship, corporate social performance (CSP) has been majorly used as a proxy for sustainability measurement to assess the firm- or company-level impacts. Meta-analysis has also been used as a statistical tool to meaningfully assimilate the existing literature. There are certain advantages of this particular approach. First, incorporation of a large number of studies helps to improve the statistical power of small or inconclusive studies to answer questions and the ability to identify sources of diversity across various types of studies. Second, meta-analysis also helps to summarize the results from various studies conducted at different points of time and at varied geographical locations. Third, meta-analysis can be used to detect cases of publication bias as well as deficiencies in the design, conduct, analysis and interpretation of research. Fourth, the application of this approach helps to reveal cases of heterogeneity among studies which may otherwise affect the overall findings of the studies. Hence at first, a detailed review of these studies has been conducted to understand its historical roots and methodologies. Secondly, a meta-analytic review is conducted to comprehend the global findings have been presented by incorporating 100 academic studies conducted at different points of time from 1990 to 2015. Studies conducted prior to 1990 have not been considered due to the concern raised by Buerden and Gössling [2]. According to them, the Brundtland Commission Report was published in 1987, which is believed to be one of the pioneering reports on the sustainable development and can be viewed as a turning point in the attention toward CSR. In this context, the role of business was discussed from an alternative perspective. The organizational consequences of the report and the stakeholder responses are highly unlikely to be reflected in academic studies conducted prior to 1990. The present study is in strong concurrence with the concerns pointed out by previous researchers and hence does not incorporate studies conducted before 1990. The present paper is organized as follows: Sect. 2 includes a review of the literature, Sect. 3 presents the methodology, Sect. 4 presents the research results, and this is followed by conclusions.

7.2 Literature Review

There have been several meta-studies and primary surveys conducted in the developed markets to assess the importance and potentiality of ESG integration in investment portfolios. The crucial question addressed here is whether ESG investing leads to

increased financial returns in the form of profits and shareholder value, i.e., whether ESG factors are material. Materiality of ESG factors in investment portfolios will encourage investors to focus more on the sustainable value of investments, thereby leading to achieve the larger goals of sustainability. Positive relationship between ESG factors and portfolio performance based on research carried reported: [3–7]. At the same time, other researchers pointed out neutral [8, 9] or negative relationship [10] between ESG factors and portfolio performance. RobecoSAM [11] refers to a study conducted by the US-based Governance & Accountability Institute, Inc. (G & A). It has found that, in 2011, approximately 53% of S & P 500 companies reported on ESG topics compared to 19–20% in 2010. According to the report, these numbers are even higher in other parts of the world and are partially reflected in the 66.6% increase in RobecoSAM's Corporate Sustainability Assessment (CSA) response rate since 2003. The increased numbers are fueled by increasing stakeholder pressure in the environment and social domains. Companies are strengthening the accountability of ESG metrics to meet investors' needs to provide more comparable and meaningful information. A recent study by the Association of Chartered Certified Accountants (ACCA) and Eurosif suggests that 66% of investors agree to the European Commission's proposal to cover a minimum number of environmental, social, employee, human rights and anticorruption issues. Accordingly, governments, national stock exchanges, local communities and employees demand more reporting transparency and accountability. Innovest [12] had carried out a meta-analysis of 60 studies to assess the relationship between environmental governance and financial performance. Environmental governance has been defined as the state of governance that describes a company's management of its environmental impacts, risks, performance and opportunities. The fundamental financial performance parameters used in this report are shareholder value, share price, market cap, market share, BMV, EBIT, EBITDA and operating costs. According to the report, 72% of the studies reported a positive relation between environmental governance and financial performance, 17% highlighted negative correlation, and 11% confirmed a neutral relationship. Sector-specific studies reflected 79% positive correlation between environmental and financial performance, 14% reflected negative correlation, and 7% reported a neutral relationship. Lastly, fund studies highlighted 70% positive correlation, 24% showed negative correlation, and 6% witnessed neutral relation between environmental and financial performances. The market studied in the report pertained to developed markets. Although the definition of corporate financial performance (CFP) is not debated in the literature, there exists incongruity with respect to the best way to quantify CFP [13]. According to Orlitzky et al. [5], the wide gamut of the academic literature available to capture CFP highlights basically three forms: market, accounting and survey measurements. The approach based on market emphasizes the degree of shareholder satisfaction; the second approach captures the internal efficiency of a firm, and the third provides a qualitative and subjective estimation of financial performance. The accounting and market measures of CFP, viz. ROA, ROE, ROS, cost of capital, turnover, Tobin's Q, operating expenses, P/E ratio and ratio of profits to assets, have been used in several studies [4, 10, 14–30]. Studies have also resorted to fund analysis mechanisms, and the financial indicators mostly used in such studies are Jensen's

alpha, Carhart's alpha, Sharpe ratio and Treynor ratio [31–48]. In this context, the study intends to emphasize that the financial variables employed to measure CFP are supported in the literature by precise forms. On the other hand, there is no universally accepted variable to measure CSP that is unanimously acknowledged by every stakeholder. Weber et al. [10] have conducted a study by comparing 151 SRI funds against the MSCI conventional fund using Jensen's alpha and Sharpe ratio. The study which covers Europe, Asia-Pacific, North America, South Africa and Latin America has clearly shown the outperformance of the SRI fund over its conventional peers. On the other hand, Kreander [33] had performed a study by considering 80 funds, out of which 40 belonged to the ethical group and other 40 belonged to the non-ethical group. The study covered the European countries of UK, Sweden, Germany, the Netherlands, Norway, Switzerland and Belgium. With the help of CAPM, Fama French 3-factor and Carhart 4-factor models, the risk-adjusted returns were measured by Jensen's alpha and Sharpe and Treynor ratios. The study surprisingly found the under-performance of the ethical funds over the non-ethical ones. However, most of the studies mentioned have used negative screens in selecting companies and funds. There is another set of studies (through limited) which assess the impact of both the positive and negative screens on financial performance. Such a study by Stenstrom and Thorell [48] conducted in Sweden measured the performance of SRI funds over its conventional peers. The study has used CAPM and Carhart 4-factor models to estimate Jensen's alpha and Sharpe ratio and found an inverse U-shaped relationship between CSR and financial performance. Moreover, the results of the study have also emphasized on the fact that investors should carefully estimate the screening method and fund management of SRI fund investments as they seem to have an effect on the fund performance. Fund management of regular funds has been found to perform better than that of the SRI funds. Stock exchanges in both developed and developing economies across the globe have launched sustainability indices to comprehend the market mood of the sustainable investments. Examples of this include the stock exchanges in several developed economies of UK, USA, Australia, France and South Africa. This proliferation is based on the fact that market is evolving from largely value-oriented investors and now involves a great segment with a growing emphasis on investors seeking long-term value. However, the role of the stock exchanges has not been limited to launching of sustainability indices but has also been instrumental in providing sustainability guidance to listed companies and assists in the development of carbon markets in developing countries as well. The growing awareness has also led some stock exchanges such as the stock exchanges of South Africa and Istanbul to become signatories to the UNPRI. Sustainability reports are also published by the Spanish and Hong Kong stock exchanges.

The existing studies in this domain lack comprehensiveness in approach. There have been a plethora of studies to establish the relationship between sustainable performance and financial performance of companies. However, corporate entities such as investors and companies are still not convinced about the value-adding potential of ESG investments. This is because most of the studies have been sector-specific and concentrated in the USA. Some studies have focused on company performance, while several studies have focused on fund performance. More to this, the time period

considered for such studies has also been constricted to a narrow time period. The meta-studies existing in this domain are also subjected to the mentioned shortcomings along with accommodating a small sample of studies. Moreover, these studies also do not address the influence of other intervening or control variables which may impact the relationship. The present study attempts to address these limitations by incorporating a larger sample and time period of study, a wider gamut of sectoral classification of portfolios, types of analysis, control variables and domiciles to accentuate comprehensiveness and clarity in approach.

7.3 Methodology

The use of meta-analytic approach in determining whether the inclusion of ESG factors results in increased financial value has been one of the very innovative approaches in the academic literature. Screening of relevant studies based on the authors' objective has indeed produced desired results. Usually, two types of statistical methods have been applied to summarize the results. First, use of descriptive statistics and synthesis of the academic studies have been used to integrate the findings [49]. Secondly, explanatory variables have been used to synthesize the different indicators of sustainability performance [5, 51–53]. Most of the studies mentioned here have been domiciled in USA and have established a positive relationship. As a matter of fact, meta-analysis has proven to be a very useful technique in several substantive areas where findings from several studies have yielded inconclusive and conflicting results [5]. Corporations and academicians have used this statistical technique to establish the relationship between sustainable factors and financial performance of companies. Phillips, Hager and North Investment Management [51] had performed a meta-analysis with 17 studies on SRI funds, considering the time period 1993–2007, and established a neutral to positive relationship between CSR and investment returns. In another study, Rathner [52] had applied a logit model to meta-analytic data extracted from 25 key studies to understand the performance of SRI funds. The study had embarked on a positive relationship. Large sample studies have also been conducted with the help of meta-analysis. In a recent report by Allianz GI Solutions [50], meta-analysis was performed with the help of 190 studies to check the materiality of ESG factors on equity portfolios. Vishwanathan and Heugens [53] had assimilated results from 280 core studies, collected over a period of 40 years to establish a positive relationship between CSR and financial performance. There are at least two approaches which may be used to analyze secondary data accrued through meta-analysis of the relevant literature. First, according to Buerden and Gössling [2], a meta-analytic approach can be used to evaluate studies using descriptive analysis, in which each evaluated study constitutes a unit of analysis. Secondly, a meta-analysis can be used for a particular number of studies to extract information relating to data sets and correct for sampling and measurement errors [5].

The present study is classified according to the first definition of meta-analysis due to the following reasons. First, the primary aim of this chapter has been to gauge

the direction of relationship between CSP and CFP (positive, negative or neutral) and uncover the key factors which influence the relationship in an inductive way, such as the moderating and control variables. Secondly, the data accrued from the selected studies is qualitative in nature. Hence, descriptive statistics seem to be the most relevant and appropriate technique to summarize the data. Additionally, this method has also been applied by Boaventura et al. [49] to establish the causal relationship between CSP and CFP.

7.3.1 Sampling Technique

The Cochrane methodology for systematic reviews[1] has been followed for searching and selecting the studies. First, we conduct an extensive search with keywords in JSTOR, Google Scholar, SSRN and ResearchGate. The terms used for searching are "ESG investing and financial performance", "the relationship between corporate social performance and financial performance", and "sustainable business adds value". Secondly, the researcher has communicated over emails with other researchers working in similar areas for getting access to unpublished studies. Thirdly, references and cross-references have been used to collect papers for the purpose. This has resulted in assembling 100 relevant studies over the time period 1990–2015.

7.3.2 Statistical Analysis

Every article extracted has been analyzed at depth to understand whether the sustainable factors add value to business and business investments in particular. All the studies have been critically and carefully reviewed according to the following specifics: (1) year of publication, (2) type of document, (3) time period of study, (4) domain or geographical location studied, (4) mode of data collection and databases used, (5) financial instrument applied, (6) approach used for selection of stocks (wherever applicable), (7) statistical models considered, (8) financial performance indicators taken into consideration, (9) sustainable performance measures taken into account, (10) control variables and (11) the direction of relationship established between sustainable factors and CFP.

[1] It is by far the most comprehensive document which provides guidance to the authors for conducting systematic reviews in accordance with Cochrane Collaboration Group Controls. The handbook provides eight steps for the reviews: (1) defining the review question(s) and developing criteria for including studies; (2) searching for studies; (3) selecting studies and collecting data; (4) assessing risk of bias in included studies; (5) analyzing data and undertaking meta-analyses; (6) addressing reporting biases; (7) presenting results and "summary of findings" tables; and (8) interpreting results and drawing conclusions.

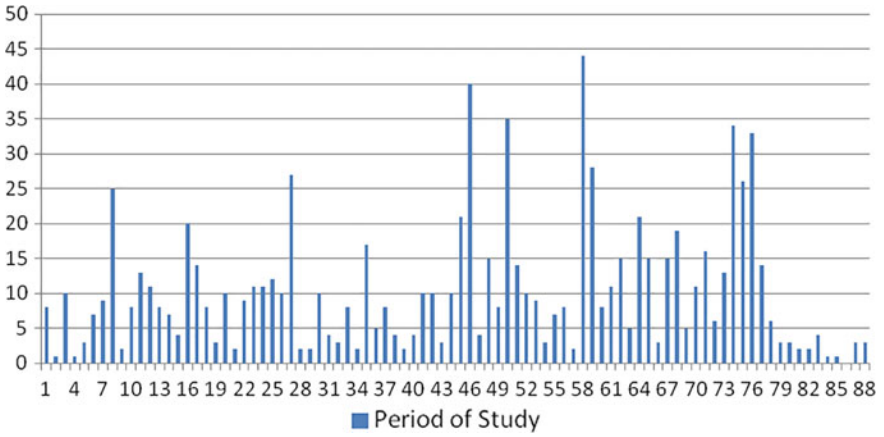

Fig. 7.1 Depth of studies considered for meta-analysis

Table 7.1 Descriptive statistics of empirical analysis

Type of Document	Percent
Secondary	81.0
Primary	1.0
Meta-analysis	13.0
Behavioral study	1.0
Content analysis	1.0
Theoretical model	1.0
Event analysis	1.0
Literature review	1.0
Total	100.0

The sample considered for our analysis constitutes of 100 studies of varied time periods under study. The lowest time period of the sample has been one year, and the highest has been 44 years. This variability has been illustrated in Fig. 7.1.

The compendium of studies consider several types of analysis for the purpose, namely secondary analysis, primary analysis, meta-analysis, content analysis, behavioral study, theoretical modeling, literature review and event analysis, as illustrated in Table 7.1. For the sample covered under our study, there has been a predominance of the use of secondary sources. The second most important type of analysis has been meta-analysis with the help of relevant academic studies.

The different studies considered under our period of study take into account several sustainability factors concerning environmental, social, CSR, corporate governance and ethical concerns. Very few studies have actually mentioned the key ESG factors considered. However, the plethora of key factors is stated in Table 7.2. As is evident from the table, the environmental factors considered mostly include the production of harmful substances which directly or indirectly can affect the ecological system. The

Table 7.2 ESG factors considered

Environment	Social	Corporate governance
No. of inspections by the environmental agency Eco-efficiency in products and processes Energy efficiency of buildings Effective emission reductions Variability of air pollutants Quantity of hazardous waste Ozone-depleting chemicals Agricultural emissions Carbon intensity (calculated) Gross production of fossil energy Operation of energy plants based on fossil energy or nuclear energy Production of harmful substances according to the Stockholm agreement Sustainable fishery or forestry Production of nuclear reactors Operations related to genetically modified organisms Production of weapons or military machines Production of tobacco and cigarettes	Communication to employees Health-related benefits to employees Compensation to employees Teamwork and philanthropy Dimensions of charitable contributions Revealed misdeeds Employer–employee relations Gender ratio at workplace Human rights Product quality Policies on health and safety Working hours and wages Child/forced labor issues Community involvement policy and programs Supplier information	Shareholder advocacy Community investing Shareholder rights CG disclosures and transparency Board composition; board and CEO compensation Litigation fees Range of takeover Defense Rights and duties of shareholders

social factors deal mostly with the well being of employees, and governance domain includes several indicators starting from transparency to shareholder proposals.

Analytical review of the sample indicates that majority of studies relating to materiality or value addition of ESG or socially responsible investments have been carried out in developed economies, especially USA and UK, with an extremely insignificant fraction conducted in developing economies. Table 7.3 illustrates the same. Table 7.3 is reflective of the wide range of developed and developing economies which have been covered in this paper. As is also consistent with the findings of Orlitzky et al. [5], most of the academic studies undertaken have focused on USA.

Different studies have adhered to different types of databases for obtaining data for both financial and sustainability factors. The most commonly used databases considered for the studies are Thomson Reuters, Datastream, Bloomberg, Compustat, Morningstar and CRSP. Different types of documents have been considered for the study, namely academic papers, PhD thesis/M.Sc. dissertations and reports by some of the ESG research consulting houses. Information on this has been highlighted

Table 7.3 Descriptive statistics on geographical domain of study

Country N	Responses		Percent of cases	Country N	Responses		Percent of cases
Global	12	7.5	12.0	Switzerland	3	1.9	3.0
Europe	12	7.5	12.0	Belgium	4	2.5	4.0
Australia	5	3.1	5.0	Austria	2	1.3	2.0
Sweden	7	4.4	7.0	France	4	2.5	4.0
UK	11	6.9	11.0	Italy	2	1.3	2.0
USA	55	34.6	55.0	Luxembourg	2	1.3	2.0
Asia-Pacific	2	1.3	2.0	Denmark	2	1.3	2.0
North America	2	1.3	2.0	Canada	4	2.5	4.0
South Africa	2	1.3	2.0	Taiwan	1	0.6	1.0
Latin America	1	0.6	1.0	Czech Republic	1	0.6	1.0
Vietnam	1	0.6	1.0	Japan	1	0.6	1.0
Greece	2	1.3	2.0	Spain	2	1.3	2.0
Korea	1	0.6	1.0	Portugal	1	0.6	1.0
Germany	7	4.4	7.0	Ireland	2	1.3	2.0
The Netherlands	5	3.1	5.0	India	1	0.6	1.0
Norway	2	1.3	2.0	Total	159	100	159

Table 7.4 Descriptive statistics of document type

Type Frequency	Percent	
Academic papers	86	86.0
Thesis/dissertation	8	8.0
Report	6	6.0
Total	100	100.0

Table 7.5 Descriptive statistics of relationship established

Relationship	Percent
Negative	14.0
Positive	66.0
Neutral	20.0
Total	100.0

in Table 7.4. Academic papers have been mostly considered for the purpose of the study.

As we have previously mentioned, the studies considered for our analysis entail different kinds of analysis, namely mutual fund performance over the benchmark asset, comparison of SRI funds vis-a-vis its conventional counterpart, portfolio studies and firm-level analysis. Taking all these studies together, we have found that the overall influence of ESG or sustainability factors on financial performance is positive. Table 7.5 provides the frequency distribution.

7.4 Results and Discussion

For the purpose of the analysis, 100 academic studies, reports and thesis/dissertations have been considered which vary according to the financial variables of performance evaluation, control variables, methodology employed, statistical model considered, databases and depth of study. We will decipher these variabilities one by one. The variables considered for the study have been provided in Table 7.6. The financial performance indicators take account of company or firm's financial performance measures including accounting and market measures. Return on assets (ROA) measures the short-term performance and does not reflect the long-term performance. Table 7.6 illustrates in detail both the percentages of studies which have considered the indicators (Column B) and also the relative performance of the indicators with respect to the whole (Column A).

As we observe from Table 7.6, the measures such as ROA, ROE, ratio of profits to assets, EBIT, ROI, leverage, Tobin's Q, cash flow and total shareholder returns (TSRs) measure the financial position of the firm. Other indicators which have been used to measure mutual fund performance include Jensen alpha, Fama French alpha, Carhart alpha, Sharpe ratio and Treynor ratio. These measures have been used to compare

Table 7.6 Descriptive statistics of financial performance indicators

Financial variable	N	Column A	Column B	Financial variable	N	Column A	Column B
Jensen's alpha	28	13.3	28.6	EPS	2	0.9	2.0
Sharpe ratio	17	8.1	17.3	Total shareholder returns (TSRs)	1	0.5	1.0
Treynor ratio	4	1.9	4.1	ROCE	2	0.9	2.0
ROA	24	11.4	24.5	M2 ratio	1	0.5	1.0
ROE	16	7.6	16.3	Appraisal ratio	1	0.5	1.0
Ratio of profits to assets	4	1.9	4.1	Leverage	1	0.5	1.0
Stock returns	12	5.7	12.2	Sales growth	1	0.5	1.0
Tobin's Q	15	7.1	15.3	Market value	6	2.8	6.1
Operating performance	3	1.4	3.1	Net profit margin (NPM)	1	0.5	1.0
ROS	7	3.3	7.1	Other	18	8.5	18.4
NAV	2	0.9	2.0	Carhart alpha	18	8.5	18.4
ROI	1	0.5	1.0	Treynor measure	3	1.4	3.1
Asset turnover	1	0.5	1.0	Fama French alpha	14	6.6	14.3
Cost of capital	3	1.4	3.1	Cash flow	2	0.9	2.0
Volatility	2	0.9	2.0	EBIT	1	0.5	1.0
Total		211		100		215.3	

with the benchmark index as a part of the fund analysis. This apart, portfolio analysis has also been conducted, where stock returns and net asset value are considered for evaluation purpose. The most important part of the study is this one where the authors have used more than one regression model for the purpose. Table 7.7 presents a synopsis of the models used. In reality, CAPM has been commonly used to estimate expected returns from an asset or portfolio and compare the returns from a sustainable asset vis-à-vis the traditional counterpart. Different types of regression analysis have been resorted to by the authors depending on the type of data estimated. The table is also reflective of the not-so-common financial models such as O-bucket adjusted model, and Ohlson and GARCH models for the purpose.

The analyzed studies considered a broad range of variables that influence the concerned relationship. These are control variables or intervening variables, depending on the statistical model used. The list of variables and the frequency distribution is illustrated in Table 7.8. So, the other important and intervening variables which might have a significant influence on the estimated relationship include firm size, book-to-market ratio, investment patterns and operating risk. Time fixed effects have also been considered in certain types of analysis to eliminate the time-invariant fixed effects.

The current study presents a meta-analytical approach to the role of sustainability factors on financial value addition. Taking into account the financial model considered for evaluation, financial and control variables, nature of data analysis, databases and time period of the study, the statistical evaluation of the studies pooled together highlights the significant positive value addition by ESG or sustainability factors. However, there is a significant opportunity to expand this research. First, studies can be screened further to include only those which provide numerical data on the level of correlation between sustainability factors and value addition. Second, the impact of the explanatory financial variables could be further analyzed through the help of studies which include numerical data. This requires access to a large number of relevant databases. Third, there is also a possibility of analyzing the causal relationship between sustainability factors and financial variables. Nevertheless, we expect that the present study will provide the necessary impetus and assurance to business entities, policy makers and institutional investors to take up strategic actions related to ESG investments.

7.5 Conclusions

At present, developed economies are going through their phases of fiscal consolidation. Not only that, even developing and emerging economies are facing their fair share through resource scarcity in light of increased population and ever-increasing environmental problems. Yet, they are converging toward the helm of global economic activity. As a result, traditional models of analysis that investors use to identify investment opportunities may fall short of covering the range of variables that are important for analyzing emerging economies. Local and global companies operating

Table 7.7 Descriptive statistics of financial models

Model	Responses		Column B	Model	Responses		Column B
	N	Column A			N	Column A	
CAPM	26	19.4	26.0	GARCH model	1	0.7	1.0
Fama French 3 factor model	13	9.7	13.0	Ohlson model	1	0.7	1.0
Carhart 4–factor model	23	17.2	23.0	Life cycle assessment (LCA)	1	0.7	1.0
Multivariate panel regression	23	17.2	23.0	Data envelopment analysis (DEA)	1	0.7	1.0
O-bucket adjusted model	1	0.7	1.0	Other	22	16.4	22.0
Markov switching model	2	1.5	2.0	Fama–MacBeth regression	1	0.7	1.0
Multifactor model	6	4.5	6.0	Nonparametric regression	1	0.7	1.0
Logistic regression	3	2.2	3.0	Moderated regression analysis	1	0.7	1.0
Probit regression	3	2.2	3.0	Markowitz model	1	0.7	1.0
Tobit regression	1	0.7	1.0	Treynor–Mazuy (TM) and the Henriksson–Merton (HM) models	3	2.2	3.0
Total	134	100	134				

Table 7.8 Descriptive statistics of control variables

Variable	Responses			Variable	Responses	
N	Percent of Cases		N		Percent of Cases	
Sales growth	4	3.5	11.1	Media exposure	2	1.8	5.6
Research and development intensity	5	4.4	13.9	Strategic holdings	1	0.9	2.8
Firm/fund size	27	23.9	75.0	Slack	1	0.9	2.8
Age of firm assets/fund	6	5.3	16.7	Financial activities	1	0.9	2.8
Capital intensity	2	1.8	5.6	Advertising intensity	3	2.7	8.3
Firm financial leverage	4	3.5	11.1	Multinationality	1	0.9	2.8
Operating risk	6	5.3	16.7	Volatility of fund returns	1	0.9	2.8
Industry specification	9	8.	25.0	Macro-economic factors	1	0.9	2.8
Debt level	1	0.9	2.8	Time fixed effects	6	5.3	16.7
Book-to-market ratio	10	8.8	27.8	Survivorship bias	1	0.9	2.8
Momentum	7	6.2	19.4	Global customers	1	0.9	2.8
Time variation in betas	2	1.8	5.6	Business type	1	0.9	2.8
Price-to-earnings ratio	1	0.9	2.8	Profit of the firm	1	0.9	2.8
Investment style	4	3.5	11.1	Liquidity	1	0.9	2.8
Management company traits	1	0.9	2.8	Dividend	1	0.9	2.8
Geographic area 1 of investment		0.9	2.8				
Total		113		100		313.9	

in these countries face unique social, economic and environmental risks related to the efficient extracting and exploiting of commodities. As a result, a growing number of investors are asking about corporate responsibility and sustainability in the emerging markets. As a matter of fact, emerging market companies that effectively address sustainability risks and opportunities are becoming global leaders in their field and in the creation of long-term shareholder value. The materiality of ESG investments has been debated a number of times at various academic gatherings. Although there are certain evidences of negative to neutral impact of ESG factors in business investments, majority of the studies have established beyond doubt the value-adding potential of such type of investments. If the market recognizes and acknowledges this value, it is highly likely that the sustainable company shares fetch a price premium in the market. This will lead to increase of the market capitalization, a reduction in the cost of equity capital and a subsequent increase in the value of the firm. Additionally, if the information perceived by the market participants about value addition potential of the sustainable firms is correct, this will enhance the intrinsic value of the company which is reflected in the financial ratios ROA, ROE and ROS. Hence, if the company decides to keep its dividend policy intact, then a rise in ROE will accentuate the sustainable growth rate of the firm. Now, if the company increases the dividend rate, the amount of earnings retained will fall. However, if the rate of increase of ROE overpowers the decrease of the retention rate of the firm, the growth rate of the firm is expected to rise. In case, the rate of increase in ROE just offsets the decrease in retention rate, the sustainable growth rate of the firm remains unchanged.

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