# THREE ESSAYS IN CORPORATE SUSTAINABILITY

By

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#### ABSTRACT

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This dissertation research is motivated by concerns regarding lack of strategic linkages between the corporate sustainability strategy, the business strategy and the sustainability context. The dissertation consists of three essays.

Essay one investigates the short term linkages between business sustainability and corporate financial performance (CFP) for the large U.S. based firms (by market value). Entry and exit from Dow Jones Sustainability Index (DJSI) has been used as a proxy for overall corporate sustainability performance (CSP) of the firm. Firms' financial performance is evaluated through stock market returns estimated during the event window. GARCH based event study methodology has been used to analyze the sustainability – performance link. Results indicate that although selection or exclusion from DJSI did not affect the volatility of stock returns, the cumulative stock market returns for newly added firms declined by 1.36% during CAR (-5, +2). In comparison to the inclusion events, no significant market reaction to index exclusions is observed. Analysis of descriptive statistics indicates that the long term financial performance of DJSI companies is at par with the S&P500 firms, thereby suggesting dichotomous impacts of CSP on CFP in the short and long term.

Essay 2 seeks to explore the concept of Corporate Sustainability Performance (CSP) and accompanying constructs such as CSR processes and CSR initiatives. The authors posit a new

conceptual model of CSP by synthesizing the review of three distinct generations of CSR and CSP theoretical frameworks and several currently used corporate sustainability assessment methodologies. The extant literature has mostly analyzed these concepts, at best individually and while in several studies they have been confused with one another. Therefore the primary objective is to align these concepts in a common framework known as the CSP conceptual model. Existing models on CSP and Corporate Social Responsibility (CSR) have been categorized into three phases of development and combined with the analysis of current sustainability assessment methodologies, 3 primary constructs and 8 associated concepts have been identified. A total of 9 research propositions have been put forward to explain the nomological relationships in the conceptual model.

Essay three seeks to identify critical attributes and attribute components of corporate sustainability strategy for global agri-food companies. Semi-structured interviews with 16 sustainability experts from three groups of stakeholders: agri-food businesses, NGOs, and knowledge institutions were conducted. Results from interviews indicate that the five most critical attributes for leading and minimally effective sustainable agri-food companies are: (1) Processes to identify sustainability issues, (2) Engagement with MSGs, (3) Resource commitment to sustainability, (4) Integration of sustainability with traditional management systems, and (5) Measurement of sustainability outcomes. The thematic network analysis of qualitative data pertinent to leading sustainable agri-food firms revealed four global themes around which 16 organizing themes and 52 basic themes were found to be clustered. The four global themes are (1) Sustainability strategy is integral to corporate strategy, (2) Materiality considerations guide CSS, (3) Corporate Sustainability is multi-dimensional, and (4) Focus of CSS is both on internal and external aspects.

This dissertation work is dedicated to my teacher.

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# KEY TO SYMBOLS AND ABBREVIATIONS

CFP	Corporate Financial Performance	
CS	Corporate Sustainability	
Business expert	Company Based Sustainability Expert	
CSS	Corporate Sustainability Strategy	
CSR	Corporate Social Responsibility	
DJSI	Dow Jones Sustainability Index	
KI expert	Knowledge Institutions Based Sustainability Expert	
LSAF	Leading Sustainable Agri-food firms	
MSAF	Minimally-Effective Sustainable Agri-food firms	
MSGs	Multi-Stakeholder Groups	
NGO	Non-Governmental Organization	
NGO expert	NGO Based Sustainability Expert	

#### INTRODUCTION

The global agri-food industry is facing challenges arising from diverse expectations from a variety of internal and external stakeholders including consumers, governments, NGOs, and institutional investors (Bhandarkar & Alvarez-Rivero 2007). On one hand the agri-food industry is expected to provide access to safe, nutritious and high quality food, and on the other hand it has to facilitate farmers to produce 70% more food to feed at least 9 billion people by 2050 (Tomlinson 2011), promote responsible agricultural practices, reduce environmental impacts such as greenhouse gas emissions, socially acceptable labor practices and strengthen farming communities along the value chain (SARE 2013). According to Rabobank (2011), a leading bank in the food and agribusiness industry:

"While the next decade will be dominated by a battle for agri-commodity supply, we conclude that it is only the beginning of a profound transition in the global food and agriculture sector. In the next 40 to 50 years, the F&A sector will need to double agri-commodity supply with access to only about half of the current land, water and mineral resources. Delivering this four-fold improvement in output is the over-riding challenge facing the incoming generation of food & agriculture leaders."

The food and beverages industry has come under severe criticism from various consumer groups and NGOs concerning health effects (James et al. 2004; Vartanian et al. 2007), environmental issues such water usage and recycling (Brownell & Frieden 2009), questionable marketing practices (Montgomery & Chester 2009; Wilde 2009), obesity (Chopra & Darton-Hill 2004; Hawkes 2006), and alcohol abuse (Bond et al. 2009; Guthrie, Cuganesan & Ward 2008). In addition to that, industry wide dishonest practices such as corruption, price-fixing (Walsh 2007), monopolistic practices (Burch & Lawrence 2007; Hingley 2005), poor corporate governance (Clapp & Fuchs 2009; Palpacuer 2006) and bad working conditions (Albersmeier &

Spiller 2010) has depleted consumer trust in the working of agri-food sector. Negative consumer and critical societal groups' perceptions about conditions of agricultural practices, food production and food retailing can lead to legitimacy problems (Jansen & Vellema 2004; Thompson 1967).

Several scholars have proposed that Corporate Social Responsibility (CSR) practices can establish legitimacy of business operations, i.e., the license to operate (Heyder & Theuvsen 2008; Kuo 2013; Muller et al. 2009). Many agri-food companies have responded to these multifaceted challenges by actually going beyond CSR practices through incorporation of corporate sustainability programs as an integral part of their corporate strategy (Rankin et al 2011; Hoffman 2000; Toppinen & Korhonen-Kurki 2013; Zwetsloot 2003).

The business case of corporate sustainability (CS), that is, the notion that if firm's policies and programs enhance sustainability in the society then it is likely to result into positive returns to the firm by reducing risks (increased costs, operational disruptions, legitimacy gap etc) and improving opportunities (increased access to markets, community support, talent attraction and retention), is often seen as the main driver of CSR activities (Cruz and Wakolbinger 2008; MSCI 2012). In fact by late 1990s, socially responsible investing (SRI) had started gaining momentum and acceptance within the corporate and investment community. As a result many more sustainability indices were launched in the following decade. Some of the leading examples are Calvert, Dow Jones, FTSE4Good, Ethibel, Humanix, KLD etc. This was accompanied by increasing number of firms who initiated sustainability programs and started reporting their sustainability practices to their stakeholders.

However Baumgartner & Ebner (2010) observed that companies often have sustainability programs and publish CSR reports but their main focus remained unclear because it appears that sustainability issues are pursued more coincidentally than with a clear strategy. They further argue that although umpteen research articles are available on identifying and determining the distinct aspects of CSR in terms of economic, environmental and social dimensions, but they fail to account for the fact that sustainability strategies must be specified to improve performance in terms of firm specific 3P issues. However in most cases the important link between aspects (i.e. context specificity) and CSR strategies is missing in corporate sustainability practices.

The 2010 BCG-MIT Sloan Management Survey of 1,500 CEOs on Sustainability Initiatives also supports Baumgartner's and Ebner's assertion. In the survey, although 92% respondents said that their company addressed sustainability in some way, more than 70% of survey respondents revealed that their company has not developed a clear business case for sustainability or for that matter even a compelling one. Of these, 22% claimed that the lack of business case is the primary barrier to pursuing sustainability initiatives.

Sustainability as an integral part of corporate strategy is an emerging business function (Toppinen & Korhonen-Kurki 2013; Zwetsloot 2003). Unlike other corporate activities such as marketing, sales, corporate communication, human resource management and finance, critical attributes of corporate sustainability strategy are not well defined. Studies indicate that managerial principles that guide CSS go far beyond the present generation of ISO type management systems (Zwetsloot 2003).

The three essays of this research provide the initial point towards building a framework for Corporate Sustainability Strategy for the global agri-food companies. It aims at

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understanding which attributes and attributes components can help agri-food companies to formulate and implement successful and credible sustainability strategies. This would also help in identifying factors that contribute to establishment of contextual specificity of sustainability efforts in relation to corporate strategy and firm performance. These findings would be useful because it can assist agri-food companies to rationally allocate scarce resources in order to meet societal issues and concerns and create value while doing so, for themselves and for their stakeholders.

The following chapters of this dissertation are organized as follows. The first essay explores short term linkages between Corporate Sustainability Performance (CSP) and Corporate Financial Performance (CFP) for large (i.e. market value) U.S. firms by using the Dow Jones Sustainability index as the criterion for signaling sustainability performance. The second essay that proposes a conceptual model of corporate sustainability performance constitutes chapter two. Chapter three presents the third essay on identifying top five critical attributes and associated components of Corporate Sustainability Strategy (CSS) for global agri-food firms. The third essay is based on the notion that agri-food firms are undergoing attitude shift towards sustainability issues. Companies are moving away from visualizing them as responsibilities towards accepting them as means for creating shared value by formulating and implementing CSS as part of the corporate strategy. Conclusions are finally drawn in the last chapter.

REFERENCES

#### REFERENCES

Albersmeier, F., and A. Spiller. "The Reputation of the German Meat Sector: A Structural Equation Model." German Journal of Agricultural Economics 59 (2010): 258–270.

Baumgartner, Rupert J., and Daniela Ebner. 2010. "Corporate Sustainability Strategies: Sustainability Profiles and Maturity Levels." Sustainable Development 18 (2): 76–89. doi:10.1002/sd.447.

Bhandarkar, M., and T. Alvarez-Rivero. "From Supply Chains to Value Chains: A Spotlight on CSR." In *Industrial Development for the 21st Century: Sustainable Development Perspectives*, 440. UNDESA, 2007.

Bond, L, M Daube, and T Chikritzhs. "Access to Confidential Alcohol Indsutry Documents: From 'Big Tobacco' to 'Big Booze." Australian Medical Journal 1, no. 3 (2009): 1–26.

Brownell, Kelly D., and Thomas R. Frieden. "Ounces of Prevention — The Public Policy Case for Taxes on Sugared Beverages." New England Journal of Medicine 360, no. 18 (2009): 1805–1808. doi:10.1056/NEJMp0902392.

Burch, David, and Geoffrey Lawrence. Supermarkets and Agri-Food Supply Chains: Transformations in the Production and Consumption of Foods. Edward Elgar Publishing, 2007.

Chopra, Mickey, and Ian Darnton-Hill. "Tobacco and Obesity Epidemics: Not so Different after All?" BMJ 328, no. 7455 (June 26, 2004): 1558–1560. doi:10.1136/bmj.328.7455.1558.

Clapp, Jennifer, and Doris A. Fuchs. Corporate Power in Global Agrifood Governance. MIT Press, 2009.

Cruz, J.M., and T. Wakolbinger. 2008. "Multiperiod Effects of Corporate Social Responsibility on Supply Chain Networks, Transactions Costs, Emissions, and Risk." International Journal of Production Economics 116 (1): 61–74.

Guthrie, James, Suresh Cuganesan, and Leanne Ward. "Industry Specific Social and Environmental Reporting: The Australian Food and Beverage Industry." Accounting Forum 32, no. 1 (March 2008): 1–15. doi:10.1016/j.accfor.2007.10.001.

Hawkes, Corinna. "Uneven Dietary Development: Linking the Policies and Processes of Globalization with the Nutrition Transition, Obesity and Diet-Related Chronic Diseases." Globalization and Health 2, no. 1 (March 28, 2006): 4. doi:10.1186/1744-8603-2-4.

Heyder, M, and L Theuvsen. "Determinants and Effects of Corporate Social Responsibility in German Agribusiness: A PLS Model: CORPORATE SOCIAL RESPONSIBILITY IN GERMAN AGRIBUSINESS." Agribusiness 28, no. 4 (September 2012): 400–420. doi:10.1002/agr.21305.

Hingley, Martin K. "Power Imbalance in UK Agri-Food Supply Channels: Learning to Live with the Supermarkets?" Journal of Marketing Management 21, no. 1–2 (2005): 63–88. doi:10.1362/0267257053166758.

Hoffman, A. Competitive Environmental Strategy: A Guide to the Changing Business Landscape. Washington, D.C.: Island Press, 2000.

James, Janet, Peter Thomas, David Cavan, and David Kerr. "Preventing Childhood Obesity by Reducing Consumption of Carbonated Drinks: Cluster Randomised Controlled Trial." BMJ : British Medical Journal 328, (2004)

Jansen, K., and S. Vellema. Agribusiness and Society: Corporate Response to Environmentalism, Market Opportunities and Public Regulation. London: Sage, 2004.

Kuo, Lopin. "Is Environmental Disclosure an Effective Strategy on Establishment of Environmental Legitimacy for Organization?" Management Decision 51, no. 7 (2013): 1462–1487. doi:10.1108/MD-06-2012-0395.

Montgomery, Kathryn C., and Jeff Chester. "Interactive Food and Beverage Marketing: Targeting Adolescents in the Digital Age." Journal of Adolescent Health 45, no. 3, Supplement (September 2009): S18–S29. doi:10.1016/j.jadohealth.2009.04.006.

Mueller, Martin, Virginia Gomes dos Santos, and Stefan Seuring. "The Contribution of Environmental and Social Standards Towards Ensuring Legitimacy in Supply Chain Governance." Journal of Business Ethics 89, no. 4 (November 1, 2009): 509–523. doi:10.1007/s10551-008-0013-9.

Palpacuer, Florence. "Globalization and Corporate Governance: Issues for Management Researchers." Society and Business Review 1, no. 1 (January 1, 2006): 45–61. doi:10.1108/17465680610643346.

Rankin, A., A.W. Gray, M. Boehlje, and C. Alexander. "Sustainability Strategies in U.S. Agribusiness: Understanding Key Drivers, Objectives, and Actions." International Food and Agribusiness Management Review 14, no. 4 (2011).

Thompson, J.D. 1967. Organizations in Action: Social Science Bases of Administrative Theory. New York: McGraw-Hill.

Tomlinson, I. "Doubling Food Production to Feed the 9 Billion: A Critical Perspective on a Key Discourse of Food Security in the UK." Journal of Rural Studies 30 (2011): 1–10.

Toppinen, Anne, and Kaisa Korhonen-Kurki. "Global Reporting Initiative and Social Impact in Managing Corporate Responsibility: A Case Study of Three Multinationals in the Forest Industry." Business Ethics: A European Review 22, no. 2 (April 2013): 202–217. doi:10.1111/beer.12016.

Vartanian, Lenny R., Marlene B. Schwartz, and Kelly D. Brownell. "Effects of Soft Drink Consumption on Nutrition and Health: A Systematic Review and Meta-Analysis." American Journal of Public Health 97, no. 4 (April 2007): 667–675. doi:10.2105/AJPH.2005.083782.

Walsh, Fiona. "OFT Hands out £116m in Fines for Milk Price Fixing." The Guardian. December 7, 2007.

Wilde, Parke. "Self-Regulation and the Response to Concerns about Food and Beverage Marketing to Children in the United States." Nutrition Reviews 67, no. 3 (2009): 155–166. doi:10.1111/j.1753-4887.2009.00183.x.

Zwetsloot, Gerard I. J. M. "From Management Systems to Corporate Social Responsibility." Journal of Business Ethics 44, no. 2–3 (May 1, 2003): 201–208. doi:10.1023/A:1023303917699.

#### CHAPTER 1

# ANALYZING SUSTAINABILITY- PERFORMANCE LINK IN A QUASI-EXPERIMENTAL SETUP: EVIDENCE FROM DOW JONES SUSTAINABILITY INDEX

#### Abstract

The objective of this paper is to investigate short term linkages between business sustainability and corporate financial performance (CFP) for the large U.S. based firms (by market value). Entry and exit from Dow Jones Sustainability Index (DJSI) has been used as a proxy for overall corporate sustainability performance (CSP) of the firm. Firms' financial performance is evaluated through stock market returns estimated during the event window. GARCH based event study methodology has been used to analyze the sustainability – performance link. Results indicate that although selection or exclusion from DJSI did not affect the volatility of stock returns, the cumulative stock market returns for newly added firms declined by 1.36% during CAR (-5, +2). In comparison to the inclusion events, no significant market reaction to index exclusions is observed. Analysis of descriptive statistics indicates that the long term financial performance of DJSI companies is at par with the S&P500 firms, thereby suggesting dichotomous impacts of CSP on CFP in the short and long term.

#### Introduction

By 1993 Nike had developed and adopted a comprehensive environmental policy and had a dedicated a full department – Nike Environmental Action Team (NEAT) focusing on green issues such as recycling and environmental education. Nike has always been committed to high quality production and therefore their quality standards were strictly followed in supply contracts. However Nike never paid much attention to working conditions in their suppliers' facilities. In 1989 the pathetic workings conditions and lower than the standard wage of 80 cents a day in Indonesia based South Korean Shoe Company who made running shoes for Nike came to light. This lead to the Nike Anti-Sweatshop campaign in which trade unions, International Labor Rights Research, Human Rights Watch and many workers, took active part.

Despite Nike procuring high quality products, earning good profits and having the reputation of environmentally conscious company, it was all balanced out by negative publicity because many responsible consumers do not feel good about running in footwear that might have been produced by workers whose rights were disregarded. This example illustrates that competitive edge can only be sustained if firms simultaneously aim to target at all the three Ps (People, Profit and Planet), while in case of Nike, their business model was aiming at two Ps (profit and planet). It has also been the experience that it is better and less costly to mitigate reputation risk than to try to reinstate a tarnished reputation or brand equity. Within the present knowledge economy, social responsibility of firms must extend to people as well as to the environment (Sri Urip 2010). In the background of these developments it becomes critical for firms' success that it can send credible signal of its commitment to sustainability to the key stakeholders like shareholders, Governmental organizations, NGOs, knowledge institutions etc.

#### Dow Jones Sustainability Index

Fowler & Hope (2007) note that socially responsible mutual funds have been the subject of much research, sustainable indices however, have not received similar level of academic scrutiny. This may be due to very short history of sustainability indices. Twenty years after the launch of PAX World Fund, the world's first sustainability index, Domini 400 Social Index was launched in May 1990 (Guerard, 1997a, b). With growing acceptance of SRI (socially responsible investment) within the corporate and investment communities, many sustainability indices have been launched in last 10 years: Calvert (2004), Dow Jones (1999), FTSE4, Ethibel, Humanix, KLD, Viego etc.

Vast majority of studies dealing with sustainability indices have dealt with comparing the risk adjusted returns of sustainability indices like Domini and Dow Jones Social Index with comparable market indices like S&P 500 and Dow Jones Global Trading Index (Sauer, 1997; Cerin and Dobers, 2001). Some other studies have attempted to explore the relationship between sustainability performance and corporate financial performance by treating membership on a sustainability index as the signal for overall sustainability of the firm (Ziegler & Schroder 2010; Sonnenbery & Hamann 2006; Lopez et al. 2007). These studies use accounting data on financial performance and one of many available approaches to capture sustainability. In this study we have used the financial data on stock prices to measure financial performance. Entry or exit from a sustainability index is used to signal firm's sustainability.

Among many available sustainability indices, DJSI appear to be a logical choice because of its relatively early launch date (September 1999), its global presence, the Dow Jones Brand, and the availability of the index for licensing (Fowler & Hope, 2007). Corporations, NGOs and

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governmental organizations often refer to the DJSI for illustrating that integration of economic, environmental and social factor into firms' management and operations increases shareholder value and business transparency (Cerin and Dobers, 2001). For instance, Indra K. Nooyi, Chairman and CEO of PepsiCo said that,

"PepsiCo is proud to be the DJSI Food and Beverage Supersector leader. The SAM Assessment helps us track progress against our Performance with Purpose mission, which is to deliver sustainable growth by investing in a healthier future for people and our planet....PepsiCo's participation in the Assessment helps us identify and address emerging sustainability issues and enhance our ability to do business responsibly in the communities we operate." (SAM 2012).

The index choice was also influenced by availability issues. Initial efforts were made to gather information on multiple sustainability indices but company policies did not allow making such data available other than to licensees.

#### Sustainability Assessment Methodology

The Dow Jones Sustainability World Indexes (DJSI World) were first published on 8 September 1999 (DJSI, 2011). The major distinction between index constructions is made on the basis of positive and negative screening. Application of negative screen excludes companies which operate in seemingly unethical activities like tobacco, alcohol, adult entertainment, nuclear energy etc. This is the primary approach in the indices run by the fund managers Calvert, Domini 400, FTSE4Good index (Fowler and Hope, 2007). DJSI uses the positive screen similar to Ethibel and Vigeo indices, that is, it includes companies that score highest on a comprehensive list of sustainability criteria. The DJSI is administered by Sustainability Asset Management (SAM), a Zurich based fund management firm that devised the idea for DJSI. SAM is also responsible for administering the selection criteria. SAM's view on sustainability is as follows:

"(Sustainability is) a business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, environmental and social developments. Corporate sustainability leaders achieve long-term shareholder value by gearing their strategies and management to harness the market's potential for sustainability products and services while at the same time successfully reducing and avoiding sustainability costs and risks."

DJSI North America was launched on 23 September 2005. It tracks the sustainability performance of 20% of the 600 largest US and Canadian firms in the Dow Jones Global Total Stock Market Index (DJGTSM is the base index). For a company to be considered for inclusion in the DJSI World Index it must be among the largest 2,500 companies, by free-market capitalization<sup>1</sup>, in the DJGTSM.

Four sources of information are used on Corporate Sustainability Assessment:

- Company Questionnaires: Companies who wish to be considered for index membership have to fill out a detailed questionnaire. The questionnaire has weighted questions on economic, social and environmental factors. Generally questionnaire is distributed to CEOs and head of investors. The completed company questionnaire, signed by a senior company representative, is the most important source of information for the assessment (DJSI, 2011)
- 2) Company Documentation: Documents requested from company include sustainability reports, environmental reports, health & safety reports, social reports, annual financial reports, special reports (ex- report on corporate governance, R&D, employee relations etc) and all other sources of company information (example: internal documentation, brochures and website).

<sup>&</sup>lt;sup>1</sup> Free-float market capitalization takes into consideration only those shares issued by the company that are readily available for trading. It generally excludes promoters' holding, government holding and other locked-in shares that will not come to the market in the normal course. Therefore FFM= Share Price \* (Number of Outstanding shares- Locked-in shares)

- 3) Media & Stakeholder Analysis (MSA): SAM uses MSA to identify and assess issues that may present financial, reputational and compliance risks to the assessed companies. SAM makes use of media coverage, stakeholder commentaries and other publicly accessible sources.
- 4) Contact with Companies: SAM analysts personally contact individual companies to clarify open points that may arise during analysis of MSA, questionnaire and company documents.

## Sustainability Assessment Criteria

Selection criteria is based on widely accepted standards, best practices, and audit procedures as well as input from industry specialists and consultants. The results based on these analyses are then subjected to an external and internal audit, after which a Corporate Sustainability Score is calculated for each company.

#### **Research Objective**

The objective of this paper is to investigate short term linkages between sustainability performance and financial performance of large U.S. firms defined by their market value. When we refer to 'sustainable' firms we mean firms who have balanced all the 3Ps (people, profit and planet) more efficiently than other firms. An accepted measure of sustainable performance is gaining membership of the Dow Jones Sustainability Index (DJSI) which is considered to signal the overall sustainability (3Ps) of the firm (Robinson 2011). Therefore we will consider the membership of the DJSI to reflect firm's overall sustainability performance. Firms' financial performance is evaluated through their stock market performance.

A secondary objective to verify whether DJSI membership helps companies to improve their market value in comparison to other firms of comparable characteristics such as market value, firm size, gross profits etc. The quasi-experiment approach has been used to address the identification issue in event studies. Identification problems arise because other types of information can also affect the market in addition to DJSI events. If that is the case then both the magnitude and sign of average returns cannot be trusted. Hence further examination of the event and its effect becomes important. One caution is that it is not the intention to rate sufficiency of DJSI as a measure of corporate sustainability performance.

#### **Literature Review**

Codetermination of firms' security prices and related economic events are called event studies (Thompson 1985). Event studies start with the hypothesis about how a particular event affects the value of a firm. The hypothesis that the value of the company has changed will be reflected through abnormal stock returns (Serra 2002).

In finance, accounting and economics research, event studies have been employed to wide variety of firm specific and economy wide events. Ingram and Ingram (1993) investigated the effect of tighter capital regulations imposed on bank holding companies who issued additional equity in the three years following the regulation. O'Hara and Shaw (1990) studied the effect of bank equity values of the Comptroller of the Currency's announcement that some banks are 'too big to fail' and that for such banks total deposit insurance would be provided. They found that the announcement had positive wealth effects to the included banks while non-included banks accrued negative returns. Impact of major anti-trust investigations was studied by Fotis (2011). The study was divided into two periods: investigation period and deterrence period in order to evaluate private damages imposed on infringed firms.

Research scholars have also conducted event studies for evaluating the impact of government reforms in corporate sector (Romano 2005; Ribstein 2002, 2003; Litvak 2007). Sarbanes-Oxley Act (SOX) has been studied extensively using event study by legal scholars (Romano 2005; Ribstein 2002). Litvak (2007) found that cross listed firms react negatively to SOX related adoption events relative to non –cross-listed firms. While Pincus and Rego (2004) find an overall positive reaction to SOX by the investors.

Black and Khanna (2007) provide the event study evidence on mostly mandatory governance reforms (Clause 49) in an emerging economy, India. Previous studies have also evaluated the effect of countries' overall corporate governance regulations on share prices, volume traded, ownership concentration and firm behavior (Black et. al, 2006; Bruno & Claessens 2007; Chang 2003). But there is a potential for identification problem in such studies because government reforms mostly apply to all the public companies. Therefore when share prices move when reforms are announced, the price changes may capture other information in addition to the reforms. Black and Khanna (2007) address this identification issue by conducting a quasi- experiment. They included the large firms for whom the reform was intended as the treatment group. The smaller firms were the control group for other types of information affecting the prices. The treatment effect is the return to large firms, relative to small firms, when the reforms were announced.

Schipper and Thompson (1983) studied the impact of merger regulations on the shareholders of acquiring firms. Instead of examining specific acquisitions and related price reactions surrounding the event, they considered regulatory changes themselves as events and estimated the expected overall impact of changes rather than their effects on individual acquisitions. The study reported negative abnormal security returns to acquiring firms to regulatory changes. Karpoff and Malatesta (1995) study Pennsylvania's adoption of very strong anti-takeover law and they also found negative reaction to restriction on takeover activity.

In addition to economics, finance and accounting, event studies have been used in other applied fields as well such as food and agribusiness, supply chain and corporate sustainability issues. Several event studies have been done to evaluate the impact of sustainability signaling via additions or deletions to a sustainability index (Consolandi et al. 2008; Doh et al. 2010; Fowler & Hope 2007). Three research articles come very close to the kind of analysis proposed in this research (Robinson et al. 2011; Cheung 2011; Detre & Gunderson 2011). All the three studies evaluate the impact of DJSI membership on firms' value using event study methodology, however they are are distinct in terms of period of analysis, choice of event windows and industries analyzed.

Robinson et al. (2011) investigate reputational effects of DJSI membership that leading firms seek. They use inclusion on the DJSI as a signal for company's reputation as a sustainable firm, and evaluate whether addition or removal from the DJSI resulted in significant market value change for the North American companies in the short and medium term. They found that the mean cumulative abnormal returns (CARs) at the end of three event periods (pre-announcement, announcement, and effective) for additions and deletions show an insignificant negative shift for additions and deletions during the pre-announcement periods, insignificant negative and positive for additions and deletions for the announcement period. None of the individual day's returns or any of the CAR's during these two event periods was found to be significant. Hence they find no statistical support for the hypothesis that stocks added to (deleted from) the DJSI experience positive (negative) price change following the announcement date.

Robinson et al. (2011) have differentiated between announcement effects and listing effect in order to analyze the value of DJSI membership. Similar distinction was made by Cheung (2011) and Detre & Gunderson (2011). Robinson and Cheung use a 60- day event window and they got significantly positive returns. However hypotheses testing involving such wide event-windows become very difficult because of issues related to reduced power of statistical tests and hence the null hypothesis of zero drift in stock returns gets rejected more often than it should. The current study was able to get strongly significant results by using standards event window of 10 days. This became possible by constructing a third sample of event window called the 'actual' events. Further investigation of sample constructed using actual event dates revealed that the short term impact of DJSI membership is actually significantly negative and not positive as found in existing studies.

It is not clear from extant studies that whether firms added to the DJSI performed better than their comparable rivals or not. All they inform is whether the stock returns changed or not. It is quite possible that returns drifted on account of some economy wide events and not due to the event of our interest. This research fills this gap by using quasi-experiments where we want to test whether aggregate changes in stock returns can be attributed to entry of the firm on the DJSI or there were other factors responsible for the shift in stock returns. DJSI additions form the treatment group while invited firms form the control group.

#### Efficient Market Hypothesis

Financial market data can be used to study the impact of a specific event on the value of a firm. If we assume rationality in the market place then effects of an event will be reflected immediately in security prices (MacKinlay 1997). This is called the efficient market hypothesis. According to this view it is believed that securities markets are extremely efficient in responding to new information about individual stocks and about the stock market as a whole. When information arises, the news spread very quickly and is incorporated into the prices of securities without delay (Malkiel 2003). Therefore neither by studying the past stock prices in an attempt to predict future prices, nor fundamental analysis of firm specific information like earnings, asset values, etc., to help identify "undervalued stocks", would enable an investor to achieve returns greater than those that could be obtained by holding a randomly selected portfolio of individual

stocks with comparable risk. Hence markets are efficient in the sense that it does not allow investors to earn above average returns without accepting above average risks (Malkiel 2003). This is a very useful feature of the event studies which we can employ to measure the effect of DJSI membership on stock market performance.

## **Research Hypotheses**

Using the OLS market model, the GARCH (1, 1) model and the quasi experiment approach we test following hypotheses by examining the mean price changes of stocks around the time of announced inclusion and exclusion of the U.S. firms from the DJSI World and North American Index:

- H1. Firms added to the DJSI experience a non-zero shift in their stock prices for announcement, effective and actual event dates.
- H2. Firms deleted from the DJSI experience non-zero shift in their stock prices for announcement and effective dates.
- H3. Rival firms who are not DJSI member experience no change in their stock returns

#### **Research Methodology**

MacKinlay (1997) broadly outlined the structure of an event study: involving the following steps: (A) Defining event of interest, event window and estimation window; (B) Sample selection of firms included in the study; (C) Estimation of "normal" return and measurement of "abnormal return" during the event window; (D) Statistical testing of abnormal return

#### Defining the event, event window and estimation window

The events of interest are the annual announcements made by the Dow Jones/SAM concerning the additions to and deletions from the Dow Jones Sustainable Index (World & USA) of the U.S. firms during 2002-2011. There were 196 additions and 133 deletion events in this period. Determination of the event date was not straight forward. During 2002-05, list of all the companies that were added and deleted from the index was provided but post- 2005, Dow Jones published a press release every September with names of top company from each supersector and total number of additions and deletions. Hence it was not clear whether all the shareholders received this information on the announcement date or not.

Two other channels of releasing the event related information are effective dates and press releases. The effective date is the actual trading date when the DJSI constituents started trading on the index. The minimum gap between the announcement and effective date was nine days. Many firms informed about themselves through press release during this period. Robinson et al. (2011) did a similar event study but they did not consider the option of investigating actual dates for each individual firm. We searched for all Dow Jones events since January 2002 on the LexisNexis Academic database. Press release concerning the same firm was published on

multiple days and therefore the earliest announcement date was included as the event date for that firm. Hence we have three types of addition events based on event date selection criteria:

- 1) Announcement date events
- 2) Effective date events
- 3) Actual date events

We did not find any firm reporting their exit from the index; therefore we have two types of deletion events based on event date selection criteria:

- 1) Announcement date events
- 2) Effective date events

The time line for the event and estimation window is given in figure 1.

	(Event window)	(Post-event window]
(Estimation window]		

0

 $T_2$ 

 $T_3$ 

## Figure 1: Event and Estimation Window

In figure 1,

T<sub>0</sub>

 $T_0$  = The first period in the estimation period

 $T_1$ 

 $T_1$  = The first period in the event window

 $\tau$  (= 0) = The event date

 $T_2$  = The first period in the post-event window

 $T_3$  = The last period in the post-event window

From figure 1, let  $L_{1=} T_1 - T_0$  be the length of the estimation window and  $L_{2=} T_2 - T_1$ be the length of the event window. Event when the event being considered is an announcement, as is the case here; it is customary to define the event window to be larger than the specific period of interest (MacKinlay 1997). Hence the period of examination is expanded to include multiple days. In this study we have variable event window: (-5, +5); (-2, +2); and (-1, +1). This captures the price effect of the announcement which occurs after the stock market closes on the event day. For estimating expected returns, 252 days (L1) prior to the start of the event window were chosen. Typical length of estimation period range from 100 to 300 days in daily event studies (Peterson 1989).

## Sample of firms included in the study

For the purpose of data requirements and the event analysis, DJSI was contacted with the request to provide annual list of firms selected on the sustainability index. This task was accomplished by going through a brief review process under which we explained DJSI and SAM about the nature of our research. Following the review, we were given the DJSI (World), DJSI (North America) and DJSI (STOXX) data starting from 1999 till 2011. We are interested in the US firms from all the sectors. For the purpose of the event study, we selected those firms which were either added or deleted after the annual sustainability review. In one of the following sections descriptive information related to the DJSI data is presented in order to enhance the tractability of the study.

The sample consists of all the U.S. firms that have been added to or deleted from the Dow Jones Sustainability (World and North America) Index during the period 2002-11. Although the DJSI World Index was launched in September 1999 and the DJSI North America Index in September 2005 the year 2002 was chosen primarily because of the verificatory reasons. In event studies, the exact identification of event date is sometimes not straight forward. Hence one resorts to other sources of information in order to verify the actual day of the event (Peterson 1989). The search for DJSI related news on LexisNexis and Wall Street Journal database did not return any result prior to 2002. It is quite possible that it took a while before the DJSI started getting the recognition among market participants. Hence the year 2002 was chosen as the starting period for analysis.

At this stage it would be meaningful to identify potential biases which may have crept through sample selection. It is also useful to summarize some key sample characteristics in terms of industry representation, market value, number of employees, profitability, etc.

The DJSI North America tracks the performance of the top 20% of the 600 largest Canadian and USA companies in the Dow Jones Global Trading Stock Index (DJGTSI) that leads in the field in terms of sustainability. These 600 companies represent the eligible universe for DJSI North America and is assessed using the Corporate Sustainability Assessment (CSA) on the annual basis (The Dow Jones Sustainability North American Index Guide 2012). There is a potential sample selection bias while using the DJSI firms to estimate the effect of sustainability on stock market performance. This is because only those firms who have achieved a threshold market cap are invited to become members of the DJSI. For instance, three companies Centrica, Noble Corporation and Rohm were removed from DJSI in 2010 by SAM because their market cap fell below the index requirements, although they were very close to achieving best-in-class results with regards to sustainability in their respective sectors (Rohrbein 2010). Coca-Cola was dropped from the DJSI in 2011 for similar reasons.

Heckman (1979) discusses the bias that result from using non-randomly selected samples to estimate behavioral relationships. There are two potential implication of using the DJSI sample: (1) large firms have additional resources to devote to societal programs and publicize them as well. Therefore comparing their sustainability performance in terms of DJSI membership with the non-eligible firms, (which we are implicitly doing in this study), is certainly open to debate, (2) even if we accept that DJSI signals superior sustainability performance, it is still not clear whether the members benefitted from the DJSI tag or they performed well because of other reasons such as industry leadership.

DJSI firms came from 18 different sectors namely, automobiles & parts, banks, basic resources, chemicals, construction & materials, financial services, food & beverage, healthcare, industrial goods & services, technology, media, oil & gas, personal & household goods, retail, insurance, telecommunications, travel & leisure and utilities.

Firms from four industries, health care, industrial goods & services, retail and technology were the top performers in terms of DJSI membership. They constituted approximately 50% of the firms in the index. This was followed by the middle group firms from food & beverage, financial services, personal & household goods and utilities. Their combined memberships stood at around 29%, while the rest of the firms from remaining 10 industries contributed 21% on an average to the index. It is also interesting to note that the overall relative index composition did not change much during 2005-2011.


Figure 2: Constituents of Dow Jones Sustainability Index (2005-11)

Source: DJSI 2011

During 2002-2011, 196 firms were added either for the first, second or third time on DJSI. Largest numbers of firms were added from heath care and technology, followed by retail, utilities, industrial goods and food and beverages. There were 9 new additions from media, oil & gas and personal good and 3 from automobile and basic materials. The more the numbers of additions from a particular sector may indicate stronger competition for better sustainability performance among industry members. Groups that did not experience high number of new additions may either indicate lack of competition for improved sustainability performance or it may be due to robust sustainability performance of incumbent firms.

Industry	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Automobile	1	1		1							3
Banks	1	1		1	1		1				5
Basic Mat.			1		2						3
Chemicals		2			1		1		1		5
Construction	1			2					1		4
Financial		1		5	1	2	1	2		2	14
Food & Bev		1		6	1		1	2	1	3	15
Health Care	3	3	2	4	3	2	3	5	2	1	28
Industrial Goods	2		1	4		1	2	4	1	2	17
Insurance				1	1	2		1		1	6
Media	1	1		4			2		1		9
Oil & Gas			1	1	1	2		3	1		9
Personal Goods	1		1	3	1		1	1		1	9
Real Estate							1				1
Retail		1	1	6	1	1	2	4		2	18
Technology	5	3	1	6	1	3	1		3	4	27
Telecom.								1		1	2
Utilities	1	1		5	3	1	2	2	2	1	18
Total	16	16	8	49	18	14	18	25	13	18	195

Table 1: DJSI Annual and Industry- wise Additions (2002-2011)

Source: DJSI Dataset

Industry	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Automobile	2				1						3
Banks		1				1					2
Basic Materials	3			1		1					5
Chemicals				1	1				1		3
Construction					1		2			1	4
Financial	1				5		1	1	3		11
Food & Bev	1				1			1	1	1	5
Health Care	3	2	3		1	3	1	3	3	1	20
Industrial Goods	7	1		1	1	1	2	1	4	2	20
Insurance									1	2	3
Media	1		2		3	1		1	1		9
Oil & Gas	2								3	2	7
Personal Goods		2			1	2	1		2		8
Real Estate									1		1
Retail	3			1	1	2	1		3	1	12
Technology	2	3	2	3	2	2	4			1	19
Telecom.											
Travel & Leisure	1		1								2
Utilities	2	1		1	2		1	3			10
Total	28	10	8	8	20	13	13	10	23	11	144

# Table 2: DJSI Annual and Industry- wise Deletions (2002-2011)

Source: DJSI Dataset

Corresponding to largest number of additions, the healthcare and technology sector experienced largest number of exclusions as well, 20 and 19 respectively. They were followed by industrial goods (20), retail (12), financial (11) and utilities (10). Only 3 firms were excluded from automobile and chemicals sector and 5 each from basic materials and food and beverages.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Market Value										
Largest	188372	269532	386402	367473	382421	370240	251744	211743	199450	213886
Smallest	426	839	713	807	2063	1382	766	1096	1441	176
Average	30283	37816	42711	40427	47531	48859	34103	37113	40629	38811
Standard Deviation	43674	56168	67177	57113	61366	64038	46864	45377	48628	47860
EBITA										
Largest	32654	52205	48695	53230	65332	60383	46405	33992	29677	38299
Smallest	-1133	-822	-406	-392	-8167	-1889	-7655	-702	-152	-534
Average	2826	3700	4474	4485	5631	6546	4891	3962	4848	5225
Standard Deviation	5205	8174	8752	8015	10917	11654	8430	5756	6235	6800
Gross Profit										
Largest	34175	52205	82801	86222	94477	105483	107527	89575	86097	81274
Smallest	180	197	174	439	590	-745	-5906	46	-152	348
Average	6804	7648	9817	10010	11870	12914	11835	10490	12035	12530
Standard Deviation	8572	10564	14930	13844	16149	16900	16221	14396	15702	16156

Table 3: Financial Information on DJSI Firms (2002-2011)

Table 3 (cont'd)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Sales										
Largest	162586	164196	171652	184922	195341	203970	255112	159293	189607	236286
Smallest	337	672	711	973	1651	2012	1629	1212	938	1613
Average	18993	20010	24381	25470	29798	34164	33512	29589	32304	34245
Standard Deviation	25953	26373	32620	33486	36255	40723	42907	34424	38341	43379

Source: Compustat Annual (all figures in \$ Million)

Table 3 summarizes the financial performance of the DJSI constituents during 2002 -2011. Four measures: market value, EBITA (earnings before interest, taxes & amortization), gross profits and sales were used for this purpose. Market value for a single issue is defined as product of common shares outstanding multiplied by the month-end price that corresponds to the period end date. Most investors use fundamental analysis to pick stocks by looking at the firm's market value and compare it with the firm's book value. EBITA is the difference between revenue and expense excluding tax, interest and amortization (i.e. consumption value of intangible assets). Gross profit is revenue minus cost of goods sold (i.e. cost associated with its production and sale). For all the four performance variables we can observe that the average constituents' performance improved every period between 2002 and 2007 and then declined during 2008 recession and this trend continued till 2009. The distribution also became tighter during the economic slowdown as compared to other periods.

Estimation of normal return, measurement of abnormal return, and testing for change in beta parameter

Following Fama et al. (1969), Brown and Warner (1985), Peterson (1989) and MacKinlay (1997), we employ the market model to estimate the expected or normal returns of the DJSI firms, which is then used to calculate the abnormal returns. The market model was first proposed by Sharpe (1964) and Linter (1965) in order to remove the market-wide elements of price change (Patell 1976). The market model for expected returns used for estimation is:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad i=1....N, \text{ firm index} \qquad (1)$$

t=1.....T, day index in the estimation period

$$E(\varepsilon_{it})=0$$
  $Var(\varepsilon_{it})=\sigma_{\epsilon}^{2}$ 

According to Fama (1968), Beja (1972) and Fama (1973), the market model for the estimation of normal returns assumes that the joint distribution of returns is stationary through time (Patell 1976):

$$E(\widetilde{\varepsilon}_{it}) = 0 \tag{2a}$$

 $\operatorname{cov}\left(\widetilde{\mathsf{E}}_{\mathrm{is}},\widetilde{\mathsf{E}}_{\mathrm{it}}\right) = \begin{cases} 0, & s \neq t \\ \sigma_{\mathrm{i}}^{2}, & s = t \end{cases}$ (2b)

 $\operatorname{cov}\left(\widetilde{\mathsf{E}}_{\mathrm{it}}, \widetilde{\mathsf{R}}_{\mathrm{mt}}\right) = 0 \quad s, t = 1 \dots T, \ i = 1 \dots N$  (2c)

where

 $R_{it} = Return on security i for period t;$ 

 $R_{mt} = Return on market index for period t;$ 

 $\propto_i =$  Intercept;

 $\beta_i = \text{Slope coefficient}$  and it is a measure of stock's volatility in relation to the market

 $\epsilon_{it}$  = Disturbance term;

T= Number of observations in the estimation period = 255

Given the market model parameters ( $\propto_i$ ,  $\beta_i$ ,  $\sigma_{\epsilon}^2$ ), we can easily measure the abnormal returns (AR). The sample abnormal returns over the event window are:

 $AR_{i\tau} = R_{i\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{mt}$ (3)

From equations (1) and (3), the abnormal return is the disturbance term of the market model in the sample. There are several ways to estimate normal returns. In the constant mean model, normal return  $E[R_{it}]$  is estimated by the sample mean. Then we have the market model,  $E(R_{it}|R_{mt})$  as discussed above and the multi-index models with  $E(R_{it}|I_{jt}) = \alpha + \beta_1 I_{1t} + \dots + \beta_k I_{kt}$  are sometimes used, where  $I_{jt}$  are index returns, like industry portfolios, j = 1, 2...k. Therefore we can express the abnormal return more generally,  $AR_{it} = R_{it} - E(R_{it}|X_t)$  where  $X_t$  is the information under normal conditions.

One assumption that is implicit in the equation 3 is that the beta ( $\beta_i$ ) did not change before and after the event. If  $\beta_i$  is altered due to the DJSI effect, that is, returns of the companies that get selected on DJSI become less or more volatile, then we cannot use the estimation window  $\beta_i$  for computing the abnormal returns in the event window. Therefore we need to test whether there was a change in beta value before and after the event. If  $\beta_{before} = \beta_b$  and  $\beta_{after} = \beta_a$  and  $\Delta\beta = \beta_a - \beta_b$ , then:

**H**<sub>0</sub>: Addition (deletion) to DJSI did not change firm specific risk, i.e.  $\Delta\beta=0$ 

**H**<sub>1a</sub>: Addition (deletion) to DJSI will reduce (increase) firm specific risk, i.e.,  $\Delta\beta < 0$  ( $\Delta\beta > 0$ )

**H**<sub>1b</sub>: Addition (deletion) to DJSI will increase (reduce) firm specific risk, i.e.,  $\Delta\beta > 0$  ( $\Delta\beta < 0$ )

OLS regression based on equation 1 is estimated to obtain estimated beta values for three groups of companies: added, deleted and comparable non-member firms. The comparable nonmember companies are the ones that were invited by DJSI to participate in the corporate sustainability assessment process but did not make it to the final list. For each company, two sets of betas were calculated:  $\beta_b$  is estimated based on 250 stock returns prior to the event date and  $\beta_a$  on the basis of 100 stock returns after the end event window. Actual event dates were used as reference point for estimating  $\beta_b$ . For each firm,  $\Delta\beta$  is computed for testing the hypotheses through the regression equation:

$$\Delta\beta_{it} = \alpha_0 + \alpha_1 \operatorname{add}_{it} + \alpha_2 \operatorname{del}_{it} + \delta t + u_{it}$$
(4)

where:

 $\Delta\beta_{it}$  = beta difference for firm i in year t

add<sub>it</sub> = dummy variable for added firms

 $del_{it} = dummy$  variable for deleted firms

### t = time trend

# (A) Statistical testing of abnormal return

Following Brown and Warner (1985), we assessed the statistical significance of the event period excess or abnormal returns. The null hypothesis to be tested is that the mean event day (i.e. day '0') abnormal return (i.e. the simple average of market model abnormal returns) is equal to zero. We begin by defining following statistical expressions:

$$AR_{Nt} = \frac{1}{N_t} \sum_{i=1}^{N_t} AR_{it} \quad ,$$
(5)

$$\hat{S}(AR_{Nt}) = \sqrt{\frac{\left(\sum_{t=-249}^{t=-6} (AR_{Nt} - AR^{*})^{2}\right)}{243}}$$
(6)

$$AR^* = \frac{1}{244} \sum_{t=-249}^{t=-6} AR_{Nt}$$
(7)

In order to examine the cumulative effects of an event on security i we need to calculate cumulative abnormal return (CAR) by adding the individual period abnormal returns:

$$CAR_{i}(\tau_{1},\tau_{2}) = \sum_{t=\tau_{1}}^{\tau_{2}} AR_{it}$$
(8)

Cumulative abnormal return for N securities for a period of length s is:

$$CAR_{Ns}(T_1, T_2) = \sum_{t=T_1}^{T_2} AR_{Nt}$$
 (9)

Based on the assumption that  $AR_{Nt}$ 's are independent over time, the standard deviation of  $CAR_{Ns}(T_1, T_2)$  can be estimated based on the cross-sectional standard deviation estimators for each period t, that is :

$$\hat{S}(CAR_{NS}(T_1, T_2) = \sum_{t=T_1}^{T_2} \hat{S}(AR_{Nt})$$
(10)

where

AR<sub>it</sub> = Abnormal return of security i at event time t;

SAR<sub>Nt</sub> = Standardized abnormal return;

 $AR_{Nt}$  = Mean abnormal return on a given day t for a portfolio of N securities;

 $\hat{S}(AR_{Nt}) = Cross-sectional estimate of mean abnormal return's standard deviation (Scholes 1972); and$ 

 $AR^*$  = The grand mean of the deviation between the normal and actual returns for all the securities in the sample and for all t days within the estimation period.

According to MacKinlay (1997), the distribution of sample abnormal return and cumulative abnormal return of a given observation in the event period is:

$$AR_{it} \sim N (0, \sigma^2 (AR_{it}))$$
(11)

$$CAR_{i}(\tau_{1},\tau_{2}) \sim N\left(0,\sigma_{i}^{2}(\tau_{1},\tau_{2})\right)$$

$$(12)$$

Under these distributional assumptions (i.e. the residuals are normal and are independently and identically distributed), the Brown and Warner (1980) test- statistic under null hypothesis is:

$$\frac{AR_{Nt}}{\widehat{S}(AR_{Nt})} \sim \text{Student-t with T-1 degrees of freedom}$$
(13)

Test-statistic in equation (12) can be generalized as:

$$\frac{\frac{1}{N}\sum_{i=1}^{N}AR_{it}}{\sqrt{\frac{1}{N^{2}(T-1)}\sum_{i=1}^{N}\sum_{\tau=1}^{T}\left(AR_{i\tau}-\sum_{j=1}^{T}\frac{AR_{ij}}{T}\right)^{2}}}$$
(14)

### Event-Induced Volatility

Brown and Warner (1980, 1985) identified potential testing problems created by an eventinduced increase in variances. Underestimation of variance will lead to rejection of the null hypothesis more frequently than it should be, even when the abnormal performance is 'close' to zero. We have employed the Boehmer et al. (1991) approach which can be applied with the OLS-based market model. Boehmer et al. (1991) is same as the Patell test (Patell 1976) except that there is a final empirical cross-sectional variance adjustment in place of the analytical variance of the total standardized prediction error (Cowan 2007). This is a two- step approach which gives us the 'event- induced variance robust test-statistic' called BMP:

- (i) Event-period abnormal returns (AR<sub>it</sub>) are standardized by their estimation period standard deviation  $(\hat{S}(AR_{it}))$  which is used to compute cross-sectional mean of the standardized returns (SAR<sub>Nt</sub>);
- (ii) Cross-sectional mean of standardized returns  $(SAR_{Nt})$  is divided by their cross-sectional standard deviation  $(\hat{S}(SAR_{Nt}))$  which gives the standardized cross-sectional test-statistic.

BMP test - statistic = 
$$\frac{\frac{1}{N}\sum_{i=1}^{N} SAR_{it}}{\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N} \left(SAR_{it} - \sum_{j=1}^{N} \frac{SAR_{jt}}{N}\right)^2}}$$
(15)

where

$$SAR_{it} = \frac{AR_{it}}{\sqrt{\frac{1}{(T-1)}\sum_{\tau=1}^{T} \left(AR_{i\tau} - \sum_{j=1}^{T} \frac{AR_{ij}}{T}\right)^2}}$$
(16)

From equations (15) and (16), it can be noted that the variance of average abnormal returns is estimated from the cross-section of event date instead of the estimation period prediction errors. The purpose of standardization is to ensure that each abnormal return will have the same variance. The BMP test- statistic is distributed Student-t with N-1 degrees of freedom.

## **Research Findings**

# OLS Market Model

Regression results from equation 4 indicate that the beta values did not change on an average for either the added or deleted firms. Therefore we can use beta values that come from the estimation window. The t-values in table 4 show that coefficients for added and deleted companies is not statistically significant and hence we fail to reject the null hypothesis that addition (deletion) from DJSI did not change firm specific risk.

Variable	Coefficients	Standard Error	t - Stat	p-value
Intercept	0.035	0.03	1.03	0.3
Add	0.017	0.031	0.57	0.56
Del	-0.04	0.034	-1.12	0.26
t	-0.007	0.004	-1.38	0.16

Table 4: Regression Results for Beta Change

 $R^2$ : 0.15, Adjusted  $R^2$ : 0.09

The OLS market model discussed in the previous section is used to examine the trading behavior (i.e. abnormal returns) in three types of event periods- announcement, effective and actual. Table 5, 6 and 7 presents the mean ARs and CARs at the end of the three event periods for inclusions and exclusions events. We used three two parametric (Patell Z and BMP) and one non-parametric test (sign Z) to test hypotheses. All the three tests are jointly used to decide whether the ARs and CARs in an event period indicate significant drift in the returns.

Announcement Event Dates: The event day abnormal return (i.e. abnormal returns on day 0) is statistically non-different from zero for included and excluded firms. This result corroborates with other DJSI studies (Cheung 2011, Robinson et. al. 2011). Hence there is no evidence of announcement day effect. In other event windows also no significant results are found except for AR (1) return of -0.18%. The CAR for the announcement event dates indicates some weak statistical results. Either the sign or BMP test for event induced volatility suggest that CAR is insignificant (see CAR (-1, 1) and CAR (-5, 2) in table 3).

One of the major contributions of this study is identification of 'actual' event dates. Previous studies have also emphasized on investing effort to find actual event timings because in some cases it is not clear that when did the market participants reacted to the event. Hence many studies have used multiple event dates (Black and Khanna 2007, Robinson et al. 2011, Cheung 2011 and Panagiotis 2011) to capture the full impact of the event on performance. In Robinson's and Cheung's study two event dates were chosen to study the impact of DJSI additions and deletions on the stock returns (i.e. announcement and effective). In both the studies the market model did not detect significant abnormal returns in the commonly used event window of 10 days. They extended the event window to three months and found significant positive drift in stock returns.

There are two weaknesses with Robinson's and Cheung's approach. Firstly many firms may choose to inform their investors of their selection to the DJSI between the announcement and effective date. In that case we are not able to capture the impact on relevant event dates. Secondly use of large event windows such as those used in the above mentioned studies is not robust because there is a high possibility that the effects of other events are also captured in the same event window. Hence it is difficult to separate the effect of the event of our interest from other firm, industry or economy specific events. In this study we chose to investigate whether firms announced their selection on the DJSI during the period between announcement and effect event dates in order a construct a sample of actual event dates to address first weakness. Also much shorter event window (i.e. 10 days) is used to study the effect of sustainability on performance.

Actual and Effective Event Dates: The results for effective and actual event dates are interestingly similar to each other but they differ from the announcement event dates' results in terms of magnitude and statistical significance. Day zero average AR for newly added firms is approximately -0.40% for both the dates. All the three test statistics are significant at 1%. CAR (-5, 2) for effective event date is -0.90% as compared to -1.36% for actual event dates. This difference may be there because many firms chose to announce their inclusion before the effective dates. The effect of such in-period (i.e. the period between announcement and effective dates) announcements is captured by the actual event dates and therefore we observe a larger negative average stock returns in the later case.

		Inclusions		Exc	lusions
	Announcement	Effective	Actual	Announcement	Effective
AR(0)					
Largest Positive	4.32%	8.17%	8.2%	5.38%	47.57%
Largest Negative	-14.15%	-7.82%	-14.2%	-6.04%	-4.03%
Average	0.00%	-0.40%	-0.41%	0.02%	0.71%
Standard Deviation	1.54%	1.72%	1.95%	1.71%	5.09%
CAR (-2, +2)					
Largest Positive	17.59%	7.61%	7.35%	19.91%	60.17%
Largest Negative	-18.28%	-22.18%	-22.2%	-21.41%	-15.8%
Average	-0.12%	-0.76%	-1.08%	0.07%	0.21%
Standard Deviation	3.78%	3.70%	3.90%	4.81%	8.16%

# Table 5: Descriptive Results from the OLS Market Model

		Index Inclusi	ons (N=196)			Index Exclusions (N=133)					
Window	Mean Returns (%)	Percentage Negative	Patell Z	BMP t-test	Sign Z	Mean Returns (%)	Percentage Negative	Patell Z	BMP t-test	Sign Z	
AR(-4)	0.08	51	0.13	0.15	-0.01	0.15	46	0.55	0.72	1.32*	
AR(-3)	-0.10	56	-1.14	-1.24	-1.40*	-0.33	59	-1.36*	-1.74**	-1.62*	
AR(-2)	0.01	44	0.10	0.13	1.89**	-0.11	48	-0.77	-1.02	0.80	
AR(-1)	-0.13	53	-0.77	-0.90	-0.68	0.15	53	-0.39	-0.43	-0.41	
<b>AR(0)</b>	0.00	48	0.74	0.85	0.89	0.02	48	0.98	0.96	0.80	
<b>AR</b> (1)	-0.18	57	-2.50***	-3.31***	-1.54*	0.05	52	-0.83	-0.90	-0.06	
<b>AR</b> (2)	0.19	49	1.74**	1.67**	0.60	-0.04	52	-0.57	-0.70	-0.07	
<b>AR(3)</b>	0.15	44	1.51*	1.65**	1.89**	0.10	48	1.68**	1.61*	0.80	
<b>AR</b> (4)	-0.04	57	-1.17	-1.19	-1.54*	-0.07	53	-0.97	-0.86	-0.41	
CAR(-1,+1)	-0.36	56	-1.45*	-1.76**	-1.25	0.22	52	-0.14	-0.15	-0.07	
CAR(-2,+2)	-0.16	49	-0.30	-0.30	-0.11	0.17	49	-0.71	-0.77	-0.41	
CAR(-3,+3)	-0.12	48	-0.12	-0.13	0.32	-0.16	53	-0.48	-0.52	-0.41	
CAR(-5,+2)	-0.20	56	-1.51*	-1.69**	-0.82	-0.06	60	-0.74	-0.87	-0.24	

# Table 6: Results for OLS Market Model (Announcement Event Dates)

		Index Inclusion	ons (N=195)			Index Exclusions (N=133)					
Window	Mean Returns (%)	Percentage Negative	Patell Z	BMP t-test	Sign Z	Mean Returns (%)	Percentage Negative	Patell Z	BMP t-test	Sign Z	
AR(-4)	-0.01	54	-0.72	-0.60	-0.81	-0.13	51	-0.19	-0.14	0.11	
AR(-3)	-0.23	55	-1.97**	-2.00**	-1.10	-0.33	51	-1.07	-0.72	0.11	
AR(-2)	-0.13	52	0.35	0.30	-0.23	0.26	47	0.87	0.62	0.98	
AR(-1)	-0.07	49	-0.22	-0.17	0.76	-0.08	45	-0.17	-0.12	$1.50^{*}$	
<b>AR(0)</b>	-0.40	65	-4.55***	-4.32***	-3.82***	0.71	53	$1.46^{*}$	1.09	-0.41	
<b>AR</b> (1)	-0.04	54	-0.96	-1.12	-0.81	-0.48	56	-2.43***	-1.96**	-0.92	
<b>AR</b> (2)	-0.11	52	-1.71**	-1.43*	-0.09	-0.20	52	-0.71	-0.52	-0.06	
AR(3)	0.63	40	5.81***	4.50***	3.34***	0.08	45	0.42	0.39	$1.50^{*}$	
<b>AR</b> (4)	0.37	47	3.06***	2.53**	1.19	0.24	47	0.80	0.66	0.98	
CAR(-1,+1)	-0.52	61	-3.37***	-3.38***	-2.67***	0.16	48	-0.66	-0.40	0.80	
CAR(-2,+2)	-0.76	58	-3.21***	-3.15***	-1.96**	0.21	50	-0.43	-0.31	0.28	
CAR(-3,+3)	-0.36	51	-1.28	-1.40*	0.04	-0.04	49	-0.62	-0.55	0.46	
CAR(-5,+2)	-0.90	61	-3.19***	-3.20***	-2.67***	-0.51	48	-0.77	-0.62	0.80	

# Table 7: Results for OLS Market Model (Effective Event Dates)

	Index Inclusions (N=196)											
Window	Mean Returns (%)	Percentage Negative	Patell Z	BMP t-test	Sign Z							
AR(-4)	-0.06	56	-0.98	-0.87	-1.16							
AR(-3)	-0.16	54	-1.45*	-1.66**	-0.73							
AR(-2)	-0.05	51	-0.52	-0.43	-0.01							
AR(-1)	-0.31	55	-1.41*	-1.12	-1.02							
<b>AR</b> (0)	-0.41	65	-4.45***	-4.10***	-3.73***							
<b>AR</b> (1)	-0.16	60	-1.54*	-1.87**	-2.45***							
AR(2)	-0.15	52	-1.85**	-1.56*	-0.16							
<b>AR(3)</b>	0.38	45	3.38***	2.83***	1.70**							
<b>AR</b> (4)	0.25	45	-1.97**	-1.63*	1.55*							
CAR(-1,+1)	-0.88	61	-4.28***	-4.42***	-3.16***							
CAR(-2,+2)	-1.08	60	-3.90***	-3.83***	-2.59***							
CAR(-3,+3)	-0.87	58	-2.63***	-2.74***	-1.88**							
CAR(-5,+2)	-1.36	62	-3.88***	-3.79***	-3.16***							

# Table 8: OLS Results from the Event Study

Similar to Cheung's study there appears to be an anticipation effect because estimated abnormal returns for inclusions started declining 4 days before the day zero and this trend continued for 2 days in the post-event window (see Figure 3). However average returns became positive starting day 3 after the event. But this effect is mostly temporary because the prices again decrease from day 15 onwards.

Figure3: Abnormal Returns for Announcement, Effective & Actual Event Dates for the included



firms in 21- Day Event Window

Day zero abnormal returns for deleted firms is positive 0.71%. Patell Z test statistic is significant at 10% but the sign and BMP test are not. All the CARs are also not significant. The daily returns do not indicate any clear cut trend in prices in the pre and post event windows. The event study results for excluded firms are not as assuring as it is for the included firms. It appears that investors have not come to a consensus as to how to interpret the exclusion event as they appear to have done in case of inclusion events. The proportion of firms with negative returns is around 50% (insignificant sign test-statistic) for exclusion events whereas for the included firms this proportion ranged between 65% on day 0 to 40% on day 3 (sign test is significant at 1%).

The sample for actual event dates has no excluded firms because our search for exclusion related announcements did not return any result, that is firms excluded from DJSI did not report before the effective date probably because of anticipated negative reaction from stakeholders.

Table 5 presents some descriptive figures from the OLS market model run. AR (0) represents the event day and CAR (-2, 2) is the sum of abnormal returns over two days before and after the event day. There appears to be wide variation in stock returns to the firms, although the overall market reaction to index inclusion is negative and index exclusion is positive. As previously noted the exclusion results are not supported by the cross sectional and sign tests therefore it cannot be claimed that exclusions results represent the general market response.

#### The GARCH Model

The power of tests in case of event induced variance will depend on the volatility of the market model residual. Therefore the power can be improved by appropriately modeling the volatility process. The Boehmer et al. (1991) approach standardizes the cross sectional average abnormal returns and hence they implicitly assume that the event induced variance is same for all the securities in the sample. Engel (1982) introduced the Autoregressive Conditional Heteroskedastic (ARCH) process that allowed conditional variance to change over time as a function of past errors. Bollerslev (1986) introduced past conditional variances in the current period variance equation which became popular as Generalized Autoregressive Conditional Heteroskedasticity (GARCH).

Corhav and Rad (1996) examined the impact of correcting the market model for GARCH in an event study using a sample of divestitures. Brockett et al. (1999) also developed an event study method that assumed a market model with GARCH effects with time-varying slopes but both these studies did not include event-induced variance. Savickas (2003) study accounted for both the conditionally heteroskedastic behavior of volatility and the event-induced variance increase in a single model. They used a GARCH (1, 1) model with dummy variables to evaluate a simple test statistic that accounts for the stochastic behavior of volatility during event and estimation period. The test is an improvement over Boehmer et al. (1991) approach because the assumption that the volatility effect is same across firms in the sample has been relaxed. The simulation results indicate a higher rejection of false null hypothesis than previous tests. We have used the Savickas (2003) approach to model event induced variance and conditional heteroskedasticity which was not possible in the OLS specification of the market model. The market model corrected for GARCH is the following:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \gamma_i D_t + u_{it}, \qquad u_{it} | \Omega_t \sim N(0, h_{it}), \qquad (17)$$

$$h_{it} = a_i + b_i h_{it-1} + c_i u_{it-1}^2 + d_i D_t$$
(18)

 $D_t$  is a dummy variable that equals 1 if t is an event day and 0 otherwise.  $\Omega_t$  is set of information available at time t including all the current and previous market and security returns, current and previous volatility estimates  $h_{it}$  and current and previous error estimates  $u_{it}$ . The mean of the market model residual (i.e. abnormal return) will be reflected in the estimate of  $\gamma_i$  because by construction the mean of  $u_{it}$  is zero. The volatility of the market model  $h_{it}$  incorporates the arch and garch effects through the coefficient  $b_i$  and  $c_i$  and also account for event induced variance through the coefficient  $d_i$ . Therefore by dividing the estimated mean of abnormal return ( $\hat{\gamma}_i$ ) by the estimated standard deviation of abnormal return  $(\hat{h}_i)$  will result in a test-statistic that accounts for persistence as well as event induced volatility, that is, the cross-sectional test-statistic corresponding to BMP test-statistic is:

$$\frac{\frac{1}{N}\sum_{i=1}^{N}SAR_{it}}{\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N}\left(SAR_{it}-\frac{\sum_{j=1}^{N}SAR_{jt}}{N}\right)^{2}}}$$
(19)

where

$$SAR_{it} = \frac{\hat{\gamma}_i}{\sqrt{\hat{h}_{it}}}$$
(20)

The test statistic in equation (19) is Student-t distributed with N-1 degrees of freedom.

Cross-Sectional Dependence and Serial Correlation: Cross-sectional dependence in stock returns data is likely to exist when at least some of the returns are sampled from common time periods (Bernard 1987). Firms within an industry may co-vary together or they may be subjected to common influences on price due to economic changes (Black & Khanna 2007) during the event widow other than the DJSI-event In that case if we continue to assume cross sectional independence, that will yield biased standard error estimates leading to faulty inferences about the impact of event on stock returns. Event clustering is most likely in regulatory event studies (O'Hara & Shaw 1990; Ingram & Ingram 1993; Black & Khanna 2007 and Schipper & Thompson 1985) and also in the present study where multiple firms share the event window because Dow Jones announces all the additions to and deletions from the index on the same day. Therefore clustering of securities is a more serious problem when we force the announcement

date or the effective date to be day '0'. However when 'actual' date is used then the problem is likely to reduce given the nature of sample construction.

In order to account for cross-sectional dependence, Brown and Warner (1980) suggest that the standard deviation of abnormal returns should be estimated from the time series of the average abnormal returns over the estimation period (Serra 2002). They call this procedure as 'Crude Dependence Adjustment' (CDA).

CDA test-statistic = 
$$\frac{\frac{1}{N}\sum_{i=1}^{N}AR_{it}}{\sqrt{\frac{1}{N^{2}(T-1)}\left(\sum_{\tau=1}^{T}\left(\sum_{i=1}^{N}AR_{i\tau}-AR^{*}\right)^{2}\right)}}$$
(21)

where

$$AR^* = \frac{1}{T} \left( \sum_{\tau=1}^{T} \sum_{i=1}^{N} \frac{AR_{i\tau}}{N} \right)$$
(22)

Brown and Warner (1980) claim that for all the methods using CDA, the standard deviation for day '0' average performance is estimated from the values of the average performance measured in the days in the estimation window, therefore any cross sectional dependence is accounted for. The CDA test statistic is distributed Student-t with T-1 degrees of freedom.

The simulation results of Brown and Warner (1985) indicate that when using daily data, correcting for auto-correlation generally had no significant impact on the inferences drawn. They have shown that tests using daily stock returns and ignoring serial correlation can be well specified and results in higher power than tests that account for it. Accordingly in this research auto-correlation corrected test statistic were not used.

All the tests described above can be easily formulated to test the significance of cumulative (both absolute and standardized) abnormal returns. For example, the test-statistic for the non-standardized abnormal returns is:

$$\frac{\sum_{i=1}^{N} AR_{Nt}}{\sqrt{\hat{S}^2 \left(\sum_{i=1}^{N} AR_{Nt}\right)}}$$
(23)

Unlike the OLS market model abnormal return is not computed but estimated directly from the mean equation of the GARCH (1, 1) model. The coefficient of the dummy variableD<sub>t</sub> that is  $\gamma_i$  gives the relevant abnormal return in the event window. For example AR (0) is estimated by having D<sub>t</sub> = 1 on day 0 in the event window and zero elsewhere. Similarly CAR (-2, 2) is estimated by equating D<sub>t</sub> = 1 for two days before the day zero, the day zero itself and two days after the day zero.

GARCH (1, 1) results are identical to the results discussed for effective and actual events dates earlier in Table 5 and 6. This is because the mean equation is similar for both the market and GARCH model except the standard errors. Therefore estimated abnormal returns are almost identical but test statistics used for hypotheses testing is likely to change thereby affecting the power of hypotheses tests. Results in Table 7 and 8 conform to this. In GARCH model we accounted for event induced variance and persistence in stock returns through the CDA test-statistic. Based on this test, the abnormal returns are negative 0.41 % on the day 0 and significant at 5% (as compared to 1% in case of OLS market model. This is due to change in standard errors). CAR (-2, 2) and CAR (-5, 2) are -1.07% and -1.31% respectively and significant at 1%.

		Index Inclu	sions (N=195)			Index Exclus	ions (N=133)	
Window	Mean Returns (%)	Percentage Negative	CDA t-test	Sign Z	Mean Returns (%)	Percentage Negative	CDA t-test	Sign Z
AR(-4)	0.01	53	0.03	-0.41	-0.13	51	-0.48	0.15
AR(-3)	-0.22	55	-1.08	-0.99	-0.38	50	-1.42*	0.33
AR(-2)	-0.12	52	-0.60	-0.27	0.28	47	1.07	1.02
AR(-1)	-0.06	49	-0.28	0.73	-0.04	46	-0.15	1.37*
<b>AR(0)</b>	-0.41	65	-2.02**	-3.85***	0.67	55	2.52***	-0.77
<b>AR</b> (1)	-0.04	55	-0.19	-0.99	-0.50	55	-1.88**	-0.88
<b>AR</b> (2)	-0.12	52	-0.58	-0.27	-0.23	52	-0.85	-0.02
<b>AR(3)</b>	0.62	39	3.02***	3.31***	0.06	46	0.23	1.37
AR(4)	0.36	47	1.75**	1.16	0.21	48	0.78	0.85
CAR(-1,+1)	-0.51	60	-1.44*	-2.42***	0.13	47	0.28	1.02
CAR(-2,+2)	-0.75	58	-1.64**	-1.99**	0.19	52	0.31	-0.02
CAR(-3,+3)	-0.35	50	-0.65	0.45	-0.13	52	-0.18	-0.02
CAR(-5,+2)	-0.93	60	-1.60*	-2.42***	-0.63	53	-0.83	0.16

Table 9: Results for GARCH (	(1, 1)	) market model	(Effective Event Dates	)
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The exclusion results indicate similar weak statistical results that were found in the OLS market model. We ignored announcement event dates for the GARCH analysis and this is one of the conclusions of this research, that is, announcement event dates are not particularly useful in analyzing the stock market performance to DJSI related events because there is a lag between the DJSI press release and the time by which market gets this information.

## Identification Issue in Event Studies and the Quasi-Experiment

In the event study literature, many studies have analyzed the valuation effect of economy wide events such as inflation and corporate governance reforms that regulate the behavior of firms in relation to mergers, acquisitions, investments strategies etc. Such events affect most of the firms in the economy and hence it is difficult to distinguish share price change due to the reforms and other information (Black & Khanna 2007). Similar identification issues may arise at the other end of the spectrum. That is those events which produce quite feeble shift in the stock prices, are also difficult to get differentiated from other types of information. Existing studies indicate that the 'addition to' or 'deletion from' DJSI events did not produce large effect in terms of magnitude on the stock prices in either direction.

There are two plausible reasons behind these results:

- (i) Incorrect identification of event date/window,
- (ii) The findings are true and there is actually no significant impact of DJSI related events on returns. But for that we need to test that DJSI firms' performance is non-different from other similar firms.

	Index Inclusions (N=195)											
Window	Mean Returns (%)	Percentage Negative	CDA t-test	Sign Z								
AR(-4)	-0.06	56	-0.87	-1.16								
AR(-3)	-0.16	54	-1.66**	-0.73								
AR(-2)	-0.05	51	-0.43	-0.01								
AR(-1)	-0.31	55	-1.12	-1.02								
AR(0)	-0.41	65	-4.10***	-3.73***								
AR(1)	-0.16	60	-1.87**	-2.45***								
AR(2)	-0.15	52	-1.56*	-0.16								
AR(3)	0.38	45	2.83***	$1.70^{**}$								
AR(4)	0.25	45	-1.63*	1.55*								
CAR(-1,+1)	-0.88	61	-4.42***	-3.16***								
CAR(-2,+2)	-1.08	60	-3.83***	-2.59***								
CAR(-3,+3)	-0.87	58	-2.74***	-1.88**								
CAR(-5,+2)	-1.36	62	-3.79***	-3.16****								

# Table 10: Results for GARCH (1, 1) market model (Actual Event Dates)

We have already discussed that previous studies appear to have misidentified the event dates and that got reflected in their statistical results as well. The table below summarizes results from two recent studies that analyzed the effect of DJSI related addition and deletion events on stock returns.

Table 11 indicates that overall result for (AD, AD+4) is not statistically significant for Cheung (2011) study. In the other AD related daily windows also no significant results were found. In the ED related windows weak statistical evidence of effective change effect has been detected (Cheung 2011). Either the sign-test or t-test suggests that CAR is statistically insignificant in the AR (ED) and AR (ED+2) window. Similarly Robinson's study has produced weak statistical results for both the types of events except for CAR (CD, CD+60) window.

What remains to be confirmed is the second possibility. The AR (ED+2) window in Cheung's article shows that both the added and deleted average abnormal returns are statistically significant and positive. This indicates that there is a possibility of other types of information affecting the market in addition to DJSI related events. If that is the case then both the magnitude and sign of average returns cannot be trusted due to possible identification problem. Hence further examination of the event and its effect is required.

Black and Khanna (2007) addressed the identification issue by studying India's adoption of major governance reforms (Clause 49). Clause 49 requires public companies to firm audit committees, minimum number of independent directors, and CEO/CFO certification of financial statements and internal controls. The reforms applied initially to large firms, next to mid-sized firms, and reached smaller public firms after several-year lag. This progression of events allowed conducting a natural quasi-experiment where large firms formed the treatment group while small

firms provided a control group for other news affecting the Indian economy generally. The design in Black and Khanna study looks like the randomized pretest-posttest design but in this case the two groups have not been equated prior to the treatment. In fact they are by design kept different (group of large firms versus small firms). Since subjects are not randomly assigned to the control and treatment groups, it cannot be assumed that the groups being compared to are equivalent on all things prior to the treatment and hence internal validity is threatened. In that case when post-treatment differences between groups become visible, it is not possible to confidently attribute observed effects to the treatment due to pre-existing differences.

	Additions	Deletions	
Robinson et al. (2011)			
CAR (-60 , AD)	0.48%	0.256%	
CAR (AD, ED-1)	-0.45%	0.19%	
CAR (CD, CD+60)	2.09%**	0.034%	
Cheung (2011)			
AR (AD)	-0.13%	-0.13%	
CAR (AD-2, AD+2)	0.29%<<	0.08%	
CAR (AD, AD+4)	-0.29	-1.04	
AR (ED)	-0.19%<	0.08%	
AR (ED+2)	2.01<<	1.67<	
CAR (AD-15, ED+10)	-0.64%	-1.84%	
CAR (AD-15, ED+60)	0.49%	-1.13%	

Table 11: Cumulative Abnormal Returns in the two DJSI studies

Note:\*, \*\* Denotes statistical significance at 10 and 5% t-test

<, << Denotes significance of sign-statistic values at 10 and 5%

AD is announcement date and ED is effective date of new additions and deletions to the DJSI

Therefore care is required in constructing the groups to ensure internal validity and reliability of post-treatment effects. In other words firms in the control and treatment group are expected to be comparable along most of the dimensions such that post-treatment effects can be distinguished from pre-existing differences.

The Non-Equivalent Groups Design (NEGD) is probably the most often used quasi-experiment design used in social research apart from regression discontinuity approach. It is structured like a pretest-posttest randomized experiment but misses the key feature of randomized experiments-random assignments. In the NEGD we tend to use groups that we think of as control and treatment groups. The attempt is to select groups that are as similar as possible so that the treatment group can be compared with the other group. But we can never be sure that groups are comparable. Hence it is required to compare pre-existing groups.

The key question in internal validity is whether observed changes can be attributed to the intended cause and not to other possible causes (or alternative explanations for the outcome). The DJSI selection process provides appropriate opportunity to design a quasi-experiment with minimum threat to internal validity. We propose a multi-group design which typically involves at least two groups and before and after measurements. For all practical purposes the single most important threat to internal validity in case of multiple group design is selection bias or selection threat (Campbell & Stanley 1963). A selection threat is any factor other than the intended cause that leads to posttest differences between the groups. Hence differences that exist due to prior group differences are mostly attributed to the selection bias in the multi-group design.

In the DJSI experiment, we want to test whether aggregate changes in stock returns can be attributed to entry of the firm on the Dow Jones Sustainability Index or there were other

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factors responsible for the shift in performance. Dow Jones and SAM announce every September, the new additions to the index. Prior to that, they invite large number of firms (based on free-float market capitalization) from the investible universe to go through the corporate sustainability assessment (CSA) process in the month of April. For instance 535 U.S. firms were invited in 2011 and 539 in 2012 for the DJSI North America Index. We have to ensure if these firms are comparable to those who actually gained selection on DJSI. Then we can construct a control group of invited firms who did not make it to the final list and a treatment group of the DJSI firms.

Campbell and Stanley (1963) popularized quasi-experiments which share similar purpose with experiments, that is, to test descriptive causal hypotheses. But quasi-experiments lack random assignment. Random assignment implies that treatment(s) are assigned to experimental units by chance, for example by coin toss or use of a table of random numbers. In our case the firms are selected for DJSI review based on their market value, therefore the design lacks randomized assignment. However once the control group has been defined, it is possible to apply random assignment for the control group, which was actually implemented for sample construction. In quasi-experiments it is important to enumerate alternative explanations for treatment effect and add multiple pretests to account for the possibility of pre-existing differences. For instance if the control group firms are disadvantaged in a certain way, say brand image then it will be difficult to assert that control group firms were not favored by the institutional investors due to unfavorable public image.

We execute the similar OLS market model as we did in the case of the treatment group (see equations 1 and 3). Only effective dates were used as the event window. Announcement

dates were not found useful for impact analysis because DJSI does not release the full list of firms added to or deleted from the sustainability index. Hence it is very unlikely that the market will respond to announcement period window unless there is insider trading which is put to rest by the weak efficient market hypothesis.

The null hypothesis is that the control group firms did not experience shift in their stock returns in either direction in the effective event window. The table below summarizes the event model results for the control group firms. Day 0 abnormal returns are -0.02% but it is not statistically significant according to any of the three tests used in the analysis. Mean returns on day 3 are 0.33% and are statistically significant at 1%. Note that for the actual event dates also, the newly added firms to DJSI had positive stock return of 0.38% and significant at 1%. All the CARs are statistically non-different from zero.

The control group event study results support the hypothesis that the stock price drift experienced by the treatment group firms (i.e. included firms) is probably unique to them because control group firms did not witness non-zero abnormal returns in the event window. It also appears that the effect of DJSI on stock prices is temporary and does not last beyond third day of the event because the control and treatment group firms has positive returns beyond day 2 of the addition event.

Window	Mean Returns (%)	Percentage Negative	Patell Z-test	BMP t-test	Sign Z
AR(-4)	0.01	53	-0.24	-0.23	-0.21
AR(-3)	-0.09	53	-0.37	-0.36	-0.21
AR(-2)	-0.05	51	0.21	0.20	0.20
AR(-1)	-0.34	56	-2.57***	-2.43***	-1.20
AR(0)	-0.02	52	-1.07	-1.22	0.06
<b>AR(1)</b>	0.15	53	1.11	1.17	-0.36
AR(2)	-0.12	55	-0.70	-0.66	-0.78
AR(3)	0.33	39	2.67***	2.81***	3.73***
AR(4)	0.23	40	1.65**	2.01**	3.31***
CAR(-1,+1)	-0.21	49	-1.51*	-1.41*	0.91
CAR(-2,+2)	-0.05	53	-0.17	-0.17	-0.35
CAR(-3,+3)	-0.14	52	-0.29	-0.31	-0.07
CAR(-5,+2)	-0.18	53	-0.27	-0.24	-0.35

Table 12: OLS market model for Control Group (Treatment Group Effective Event Dates)

#### Long term financial performance of DJSI companies

Short term stock market based financial performance indicates that companies that are added to the DJSI experience negative stock returns. The negative effect on stock returns is not of permanent nature. In fact figure 3 shows that following day 3 after the actual event dates, average stock returns became positive for firms added to DJSI in the current year.

Many studies that have been conducted to test for long term impact of DJSI membership on financial performance (Ziegler & Schroder 2010; Sonnenberg & Hamann 2006; Lee et al. 2011; Waddock 1997) have returned mixed results. The aim here is not to undertake another similar study but to compare long term financial performance of DJSI companies with S&P 500 firms over the period 2002- 2011. This is done using several accounting and financial variables. Variables used for comparing the two groups of companies are: Price to book ratio, debt-equity ratio, returns on equity (ROE), returns on assets (ROA), returns on sales (ROS), and returns on capital employed (ROCE). Table 12 provides the definition that is used to calculate these variables. Financial data was obtained from WRDS database and weighted measures of financial variables were computed for two set of firms for each year. For instance, the variable ROA for a group of m companies for the DJSI is calculated using the formula:

Weighted ROA = 
$$\sum_{i=1}^{n} (W_i * ROA_i)$$
 (24)

Where

$$W_{i} = \frac{\text{Market Value}_{i}}{\sum_{i=1}^{n} \text{Market Value}_{i}}$$
(25)

Financial Variable	Definition		
Market to Book ratio	Market Value (Total Assets – Total Liabilities)		
Debit-Equity ratio	Debit in current liabilities (Total Assets – Total Liabilities)		
ROE	Net Income Market Value		
ROA	Net Income Total Assets		
ROS	Net Income Sales		
ROCE	EBIT (Total Assets – Total Current Liabilities)		

### Table 13: Long Term Financial Variables

Market to book ratio is the ratio of market value to book value. Market value is determined in the stock market through its market capitalization. Book value is calculated by reducing total liabilities from total assets of a company. The ratio provides measure of shareholders' equity in the balance sheet. It allows investors to evaluate the worth of a company with regards to its book value. When P/B ratio is less than 1, it implies that the stock is undervalued.

The simple average of weighted market to book ratio for DJSI firms over 10 years is 3.55 and 3.79 for S&P 500 companies. Figure 4 gives year to year comparison for market to book ratio.


Figure 4: Market to Book Ratio for DJSI and S&P 500 Companies

Debt to equity ratio is a measure of company's financial leverage calculated by dividing its total liabilities by shareholder's equity. A high debt-equity ratio generally means that a company has been aggressively able to finance its growth with debt. This can also lead to volatile earnings owing to additional interest payments.

The simple average of weighted debt-equity ratio DJSI firms over 10 years is 0.32 as compared to 0.27 for S&P 500 companies. Figure 5 gives year by year comparison for debt-equity ratio.



Figure 5: Debt-Equity Ratio for DJSI and S&P 500 Companies

ROE is defined as amount of net income earned as a percentage of shareholders equity. It measures a firm's profitability by calculating the amount of profit that it generates with the shareholder investments.

The simple average of weighted ROE for DJSI and S&P 500 firms does not differ much as stands at 0.05 and 0.04 respectively. Figure 6 reveals that for several years ROE for DJSI firms coincided with that of S&P 500 companies.



Figure 6: ROE for DJSI and S&P 500 Companies

Returns on Asset (ROA) is an indicator of how profitable a company is relative to its total assets. Therefore ROA gives an idea that how efficient the company is in generating earnings using its assets. The higher the ROA the better it is for the company because it indicates that the company is earning more income on less investment.

Similar to ROE ratio, the simple average of wieghted ROA for DJSI and S&P 500 companies stood close to each other at 0.075 and 0.074. Figure 7 gives year by year comparison for ROA.



Return on Sales (ROS) measures net income generated per one dollar of sales. Simple average of weighted ROS for DJSI companies (0.11) is approximately equal to ROS for S&P 500 (0.10). Figure 8 gives year by year comparison for ROA.



Figure 8: ROS for DJSI and S&P 500 Companies

Return on capital employed (ROCE) is a financial ratio that measures a company's efficiency with which its capital is employed. A higher ROCE implies more efficient use of capital. Simple average of weighted ROCE for DJSI companies (0.165) is approximately equal to ROS for S&P 500 (0.163). Figure 9 gives year by year comparison for ROA.



Figure 9: ROCE for DJSI and S&P 500 Companies

Descriptive statistics based on long term financial performance indicate that DJSI firms did not underperform as compared to S&P 500 firms. Average figures on four out of six ratios are approximately equal for both the groups of companies. Therefore there is some evidence that long term financial performance of the companies added to the DJSI did not dip relative to a comparable group of firms that did not get included on the index.

#### **Discussion and Conclusions**

Selection on DJSI resulted in an overall negative drift in the stock prices. On the event day 65% firms lost on stock returns, as estimated by the market model. The effect of DJSI on firms' market value appears to be temporary because the control group and treatment group firms started behaving similarly in the market after day 3 of the event. The results for index deletions were not found to be significant hence the overall impact for exclusion event is not clear.

Statistically significant results for the addition events for the effective and actual event dates indicate that market participants are actually incorporating firm's inclusion in DJSI index. The identification of actual event dates enhances the capability of the market model to capture the overall impact of DJSI events. Announcement event dates are not found to be much useful in analyzing the stock market performance for DJSI related events because there is a lag between the DJSI press release and the time by which market gets this information. Whereas for the actual and effective event dates it appears that the information is integrated into the market rather quickly.

Given that a firm's sustainability (as indicated by its selection or exclusion from the DJSI) has a negative impact on its market value, one may raise the question then why do corporations put effort to get selected on DJSI? Cerin and Dobers (2001) investigate the structure and transparency of the DJSI compared with DJGSTI. They showed that the DJSI focuses more on technology sector than the general DJGSTI does. During the period 2002-2011, the technology and industrial goods and service, retail and healthcare companies constituted more than 50% of the index year after year. The average market capitalization value of companies listed in DJSI was found to be two and half times the average of DJSTI components. They raise

the question in their study that does superior performance of DJSI reflect greater sustainability related efforts of DJSI companies or it is due to the asymmetric distributions in company sectors and market capitalization? It is interesting to note that *DJSI claims to follow the sustainability performance of financially successful firm rather than tracking the financial performance of sustainable firms*. Hence it is not entirely contradictory that DJSI firms do financially well in long term but lose when they get selected to the sustainability index. Detre and Gunderson (2011) also found that the share values of North American agribusinesses reacted negatively to firm's inclusion on DJSI. In their study the mean abnormal returns for CAR (-5, 5) is -4.09%. They claim that U.S. agribusinesses are likely going to have to convince investors why CSR practices are both important and necessary for long term benefits. This logic may also hold for some other sectors as well.

Generally market participant have an overall consensus when it comes to responding to a particular type of information. For instance information on sales growth of a company during a quarter is interpreted as good news and that gets reflected in the share returns of the focal firm. Similarly institutional regulations which restricts corporate activities like mergers, joint ventures, investments, access to capital is viewed negatively by investors (Schipper and Thompson 1983; Karpoff and Malatesta 1995; Litvak 2007). However in the case of analyzing the impact of sustainability news in relation to DJSI there does not appear to be a homogeneous signal that everybody appears to receive. For some firms it is beneficial while more than 65% of the firms' investors view it not so favorably. If we are having difficulty in scanning the effect of sustainability in a highly responsive environment, we can only imagine that how much more complex it would be to disentangle the effect of firms' sustainability initiatives on sustainability and financial performance in more confounding environments such as consumer markets, supply

chains, labor markets and so on and so forth. All these areas provide ample opportunity for future research for investigating linkages between sustainability initiatives and performance.

The dichotomy between short term and long term results, demand further investigation. In the first essay, the strategy was to investigate direct linkages between corporate sustainability performance and corporate financial performance. It appears that all the aspects of corporate sustainability performance cannot be accommodated in just one measure: inclusion or deletion from the DJSI. It entails a more detailed and complex analysis of corporate sustainability performance as a theoretical and later as a practitioners' based concept. Therefore the proposed strategy for the second essay is to analyze CSP as a multi-dimensional theoretical concept and not as uni-dimensional. REFERENCES

## REFERENCES

Beja, Avraham. "On Systematic and Unsystematic Components of Financial Risk." *Journal of Finance* 27, no. 1 (March 1972).

Bernard, Victor L. "Cross-Sectional Dependence and Problems in Inference in Market-Based Accounting Research." *Journal of Accounting Research* 25, no. 1 (April 1, 1987): 1–48.

Black, Bernard, Hasung Jang, and Woochan Kim. "Does Corporate Governance Affect Firms' Market Values? Evidence from Korea." *Journal of Law, Economics and Organization* 22 (2006): 366–413.

Black, Bernard S., and Vikramaditya S. Khanna. "Can Corporate Governance Reforms Increase Firm Market Values? Event Study Evidence from India." *Journal of Empirical Legal Studies* 4, no. 4 (2007): 749–796.

Boehmer, Ekkehart, Jim Masumeci, and Annette B. Poulsen. "Event-study Methodology Under Conditions of Event-induced Variance." *Journal of Financial Economics* 30, no. 2 (December 1991): 253–272.

Bollerslev, Tim. "Generalized Autoregressive Conditional Heteroskedasticity." *Journal of Econometrics* 31, no. 3 (April 1986): 307–327.

Brockett, Patrick L., Hwei-Mei Chen, and James R. Garven. "A New Stochastically Flexible Event Methodology with Application to Proposition 103." *Insurance: Mathematics and Economics* 25, no. 2 (November 16, 1999): 197–217.

Brown, Stephen J., and Jerold B. Warner. "Measuring Security Price Performance." *Journal of Financial Economics* 8, no. 3 (September 1980): 205–258.

———. "Using Daily Stock Returns: The Case of Event Studies." *Journal of Financial Economics* 14, no. 1 (March 1985): 3–31.

Bruno, V.G., and S. Claessens. "Corporate Governance and Regulation: Can There Be Too Much of a Good Thing?" *Working Paper, at Http://ssrn.com/abstract=956329.* (2007).

Calvert Group, Ltd. http://www.calvert.com/choose.html (Accessed October 25, 2012).

Campbell, D, and J. Stanley. *Experimental and Quasi-experimental Designs for Research*. Chicago, IL: Rand-McNally, 1963.

Cerin, Pontus, and Peter Dobers. "What does the performance of the Dow Jones Sustainability Group Index tell us?" *Eco - Management and Auditing* 8, no. 3 (September 2001): 123.

Chang, Sea-Jin. "Ownership Structure, Expropriation, and Performance of Group-Affiliated Companies in Korea." *Academy of Management Journal* 23, no. 1 (March 1968).

Cheah, Eng Tuck, Wen Li Chan, and Corinne Lin Lin Chieng. "The Corporate Social Responsibility of Pharmaceutical Product Recalls: An Empirical Examination of U.S. and U.K. Markets." *Journal of Business Ethics* 76, no. 4 (December 1, 2007): 427–449.

Consolandi, C., A. Jaiswal-Dale, E. Poggiani, and A. Vercelli. "Global Standards and Ethical Stock Indexes: The Case of the Dow Jones Sustainability Stoxx Index." *Journal of Business Ethics* 87 (2008): 185–97.

Corhay, A., and A. Tourani Rad. "Conditional heteroskedasticity adjusted market model and an event study." *Quarterly Review of Economics and Finance* 36, no. 4 (Winter 1996): 529.

Cowan, Arnold. "Eventus 8.0 User's Guide". Eventus Software for Event Studies & Financial Market Research, January 2007.

Detre, Joshua D., and Micheal A. Gunderson. "The Triple Bottom Line: What Is the Impact on the Return to Agribusiness?" *International Food and Agribusiness Management Review* 14, no. 4 (2011).

Dow Jones Sustainability Index Guide Book 2011. http://www.samgroup.com/images/SAM\_Yearbook\_2011\_tcm794-290391.pdf (Accessed on June 10, 2012)

Doh, Jonathan P., Shawn D. Howton, Shelly W. Howton, and Donald S. Siegel. "Does the Market Respond to an Endorsement of Social Responsibility? The Role of Institutions, Information, and Legitimacy." *Journal of Management* 36, no. 6 (November 1, 2010): 1461–1485.

Engle, Robert F. "Autoregressive Conditional Heteroscedasticity with Estimates of the Variance of United Kingdom Inflation." *Econometrica* 50, no. 4 (July 1, 1982): 987–1007.

Fama, Eugene F., Lawrence Fisher, Michael Jensen, and Richard Roll, "The Adjustment of Stock Prices to New Information," International Economic Review, 10 (February 1969), pp. 1-21

Fama, Eugene F. "A Note on the Market Model and the Two-Parameter Model." *The Journal of Finance* 28, no. 5 (December 1, 1973): 1181–1185.

Fotis, Panagiotis N. "Firm's Damages from Antitrust & Abuse of Dominant Position Investigations." MPRA Paper Number. 32788. Greece, 2011.

Fowler, Stephen J., and C. Hope. "A Critical Review of Sustainable Business Indices and their Impact." *Journal of Business Ethics* 76, no. 3 (December 2007): 243–252.

Guerard, J.B. Jr. "Is There a Cost to Being Socially Responsible in Investing." *Journal of Investing* 6, no. 2 (1997a): 11–18.

———. "Additional Evidence on the Cost of Being Socially Responsible in Investing." *Journal of Investing* 6, no. 4 (1997b): 31–34.

Heckman, James J. "SAMPLE SELECTION BIAS AS A SPECIFICATION ERROR." *Econometrica* 47, no. 1 (1979).

Ingram, Marcus A., and Virginia C. Ingram. "CONSISTENT ESTIMATION OF RESIDUAL VARIANCE IN REGULATORY EVENT STUDIES." *Journal of Financial Research* 16, no. 2 (Summer93 1993): 151.

Jin, Hyun Joung, and Jang-Chul Kim. "The Effects of the BSE Outbreak on the Security Values of US Agribusiness and Food Processing Firms." *Applied Economics* 40, no. 3 (2008): 357–372.

Karpoff, Jonathan M., and Paul H. Malatesta. "State Takeover Legislation and Share Values: The Wealth Effects of Pennsylvania's Act 36." *Journal of Corporate Finance* 1, no. 3–4 (1995): 367–382.

Linter, J. "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets." *Review of Economics and Statistics* (February 1965).

Litvak, Kate. "The Effect of the Sarbanes-Oxley Act on Non-US Companies Cross-Listed in the US." *Journal of Corporation Finance* 13 (2007).

Lopez, M. Victoria, Arminda Garcia, and Lazaro Rodriguez. "Sustainable Development and Corporate Performance: A Study Based on the Dow Jones Sustainability Index." *Journal of Business Ethics* 75 (2007): 285–300.

MacKinlay, A. Craig. "Event Studies in Economics and Finance." *Journal of Economic Literature* 35 (1997): 13–39.

Malkiel, Burton G. "The Efficient Market Hypothesis and Its Critics." *CEPS Working Paper No.* 91 (2003): 47.

O'Hara, Maureen, and Wayne Shaw. "Deposit Insurance and Wealth Effects: The Value of Being 'Too Big to Fail'." *The Journal of Finance* 45, no. 5 (December 1, 1990): 1587–1600.

Patell, James M. "Corporate Forecasts of Earnings Per Share and Stock Price Behavior: Empirical Tests." *Journal of Accounting Research* 14, no. 2 (September 1976): 246–276.

Peterson, Pamela P. "Event Studies: A Review Of Issues And Methodology." *Quarterly Journal of Business and Economics* 28, no. 3 (Summer 1989): 36.

Rego, Arménio, Susana Leal, and Miguel Cunha. "Rethinking the Employees' Perceptions of Corporate Citizenship Dimensionalization." *Journal of Business Ethics* 104, no. 2 (December 2011): 207–218.

Ribstein, Larry E. "Market Vs. Regulatory Response to Corporate Fraud: A Critique of the Sarbanes-Oxley Act of 2002." *Journal of Corporation Law* 28 (2002).

Robinson, Michael, Anne Kleffner, and Stephanie Bertels. "Signaling Sustainability Leadership: Empirical Evidence of the Value of DJSI Membership." *Journal of Business Ethics* 101, no. 3 (July 2011): 493–505.

Romano, Roberta. "The Sarbanes-Oxley Act and the Making of Quack Corporate Governance." *Yale Law Journal* 114 (2005): 1521–1612.

Salin, Victoria, and Neal H. Hooker. "Stock Market Reaction to Food Recalls." *Review of Agricultural Economics* 23, no. 1 (April 1, 2001): 33–46.

Sam Yearbook 2012. http://www.sustainability-index.com/images/sam-yearbook-2012-final\_tcm1071-337504.pdf. (Accessed on June 10, 2012)

Sauer, David A. "The impact of social-responsibility screens on investment performance: Evidence from the Domini 400 Social Index and Domini Equity Mutual Fund." *Review of Financial Economics* 6, no. 2 (1997): 137–149.

Savickas, Robert. "Event-Induced Volatility and Tests for Abnormal Performance." *Journal of Financial Research* 26, no. 2 (Summer 2003): 165–178.

Schipper, Katherine, and Rex Thompson. "The Impact of Merger-Related Regulations on the

Shareholders of Acquiring Firms." Journal of Accounting Research 21, no. 1 (1983): 184.

Shadish, W. R., T. D. Cook, and D. T. Campbell. *Experimental and Quasi-experimental Designs for Generalized Causal Inference*. Boston, MA: Houghton Mifflin, 2002.

Serra, Ana Paula. "Event Study Tests: A Brief Survey". Working Paper Series Portugal, 2002.

Sharpe, William F. "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk." *Journal of Finance* 19, no. 3 (September 1964).

Sonnenberg, Dan, and Ralph Hamann. "The JSE Socially Responsible Investment Index and the State of Sustainability Reporting in South Africa." *Development Southern Africa* 23, no. 2 (2006).

Thompson, Rex. "Conditioning the Return-Generating Process on Firm-Specific Events: A Discussion of Event Study Methods." *The Journal of Financial and Quantitative Analysis* 20, no. 2 (June 1, 1985): 151–168.

Urip, Sri. *CSR Strategies: Corporate Social Responsibility for a Competitive Edge in Emerging Markets*. John Wiley & Sons (Asia) Pte. Ltd., 2010.

Wai Kong Cheung, Adrian. "Do Stock Investors Value Corporate Sustainability? Evidence from an Event Study." *Journal of Business Ethics* 99, no. 2 (March 2011): 145–165.

Ziegler, Andreas, and Michael Schroder. "What Determines the Inclusion in a Sustainability Stock Index? A Panel Data Analysis for European Firms." *Ecological Economics* 69 (2010): 848–856.

#### CHAPTER 2

# THREE WAVES OF CSR THEOETICAL DEVELOPMENTS: PROPOSING A CONCEPTUAL MODEL OF CORPORATE SUSTAINABILITY PERFORAMNCE

## Abstract

This article seeks to explore the concept of Corporate Sustainability Performance (CSP) and accompanying constructs such as CSR processes and CSR initiatives. The extant literature has mostly analyzed these concepts, at best individually and while in several studies they have been confused with one another. Therefore the primary objective is to align these concepts in a common framework known as the CSP conceptual model. Existing models on CSP and Corporate Social Responsibility (CSR) have been categorized into three phases of development and combined with the analysis of current sustainability assessment methodologies, 3 primary constructs and 8 associated concepts have been identified. A total of 9 research propositions have been put forward to explain the nomological relationships in the conceptual model.

#### Introduction

Concepts like Corporate Social Responsibility (CSR) and Corporate Social Performance (CSP) have gained momentum in business practices and strategies over the last 20 years (Poetz et al. 2012). The business case of CSR, that is the notion that CSR programs result into positive returns to the firm by reducing risks (increased costs, operational disruptions, legitimacy gap etc) and improving opportunities (increased access to markets, community support, talent attraction and retention), is often seen as the main driver of CSR activities (Cruz and Wakolbinger 2008; MSCI 2012).

In fact by late 1990s socially responsible investing (SRI) had started gaining momentum and acceptance within the corporate and investment community. As a result several sustainability indices were launched in the following decade. Some of the leading examples are Calvert, Dow Jones, FTSE4Good, Ethibel, Humanix, KLD etc. This was accompanied by increasing number of firms who initiated sustainability programs and started reporting their sustainability practices to their stakeholders.

The change in firms' attitude towards social issues and recognizing their own social responsibility was partly driven by their conviction that if they were able to align the interest of key stakeholders with their own objectives then it will lead to stable and appreciating long term profits, and partly because many industries including pharmaceuticals, oil and gas, and agrifood in the recent past have experienced increasing pressure from their stakeholders to act responsibly and engage in stakeholder dialogues (Riordan & Fairbrass 2008).

As a result many major U.S. agrifood companies have started incorporating sustainability programs into their mainstream business operations. However in the U.S., CSR and CSP have been mostly identified in terms of philanthropy, corporate giving and environmental management. Carroll (2000, p. 473) expresses his concern over this approach in following words:

"CSP should be perceived as a comprehensive assessment of a firm's social performance and not isolated on the firm's performance with respect to one social issue (e.g., environmental, minority relations, corporate giving, and product safety) or one stakeholder. At a minimum, I believe the firm's social performance with respect to at least four or five key stakeholder groups- employees, consumers, owners, community, and perhaps, the environment (if you do not fold this into the community category)- are needed if we are talk about CSP."

One of the prime time agendas emerging in the field of CSR is to develop methods, frameworks or models which would enable firms to identify contextual specificity of their CSR programs and policies in relation to social performance. As already stated, food and agribusiness firms have been investing in socially responsible practices in order to improve their brand image among key stake holders and consumers (Saes et al. 2003; Lo & Sheu 2007), however agribusiness managers continue to be in the state of dilemma as to how the firm's sustainability performance is linked with sustainability programs and processes. There are studies in general management research that attempt to address the question if CSR adoption has an impact on firm's operations, valuations and customer response (Waddock & Graves 1997) but there is no concrete evidence of the nature of this relationship. Ullmann (1985) in his classic article 'Data in search of a theory....' concluded that there is no perceived relationship between CSP and CFP (corporate financial performance) because *good data and valid and reliable measures of CSP are not available*.

Baumgartner & Ebner (2010) observed that companies often have sustainability programs and publish CSR reports but their main focus remains unclear because it appears that sustainability issues are pursued more coincidentally than with a clear strategy. They further argue that although umpteen research articles are available on identifying and determining the distinct aspects of CSR in terms of economic, environmental and social dimensions, but they fail to account for the fact that sustainability strategies must be specified to improve performance in terms of social issues identified. However in most cases the important link between aspects (i.e. context specificity) and CSR strategies is missing in corporate sustainability practices. Therefore companies lack precise knowledge of how their sustainability programs have helped (dishelped) themselves and others. Detre and Gunderson (2011) provide an apt example of this observation. They examined the effect of adopting CSR practices on the share values of publicly traded U.S. agribusiness firms and found surprisingly negative relationship between share values of firms when the announcement is made that the firm will become a member of Dow Jones Sustainability Index.

#### **Research Objectives**

Carroll (2000) and Wood (2010) argue that CSP measurement research should be based on sound theoretical developments. CSP measures must be comprehensive, that is, that it should capture all important aspects or dimensions of business-stakeholder relationships. The relevant stakeholder groups that must be included in the CSP measurement model according to Carroll (2000) are employee, consumers, owners, community and environment. Hence we should not limit CSP to a small set of performances (e.g., only legal, only ethical/environmental, or only philanthropic/corporate giving). Many different measures of CSP have been used but very few studies are able to handle the various multidimensional variables that may be simultaneously at work, and this is one of the major challenges in the Business and Society field.

There are three major objectives of this study: (1) to conduct a review of the business and society literature for identification of unique phases in the theoretical development of Corporate Social Responsibility (CSR), (2) to review extant corporate sustainability assessment methodologies, and (3) to propose a conceptual model of Corporate Sustainability Performance (CSP) with stated research propositions.

#### **Literature Review**

Theoretical developments and debates in the CSR field are presented beginning next section in three distinct phases. The evolution of the CSR and CSP literature has been presented by several Business and Society scholars (Wartick & Cochran 1985; Wood 1991 & 2010; Frederick 1994; Carroll 1999 & 2000). So why do we need another one? The objective is not to reinvent the wheel but it is driven by the need to align the concepts and constructs proposed in the conceptual model of CSR and CSP with the theoretical developments in the arena of corporate social responsibility. Hence the goal is to identify the key constructs that came forward as a result of intense intellectual debates in this field and this exercise is anticipated to provide a holistic treatment of the measurement issue.

Ullman (1985) examined 31 articles that studied the relationship between CSP and CFP. These studies used wide variety of measures but they did not find consistent relationships. Ullman (1985) concluded that there was no perceived relationship between CSP and CFP because good data and valid and reliable measures are not available, and in part because there was no good reason that is, no theory to CSP and FP linkages. Cochran and Wood (1984) and Fogler and Nutt (1975) also raised similar questions that what is the reason behind the relationship between reputational ratings and earnings-sales ratio or between pollution performance index and normalized P/E ratios. The argument is not that the relationship cannot exist but the emphasis is on why the relationship may exist.

Wood (2010, p.60) observes:

"Attempts to link social disclosure to social performance were motivated by the desire to find a readily available surrogate (social disclosure) for the more difficult and elusive variable of social performance. Attempts to relate CSP with FP were undertaken largely in the hope of establishing a positive relationship that might be persuasive to business leaders who were skeptical about the value of CSP )."

These endeavors may have succeeded in convincing the business community to undertake extensive CSR related programs, however due to the incomplete understanding of the linkages between CSR processes, CSR orientation and CSR performance, it has resulted into more confusion regarding the purpose behind such endeavors rather than growing clarity. Baumgartner and Ebner (2010, p.76) argue that

"Although many companies investigate sustainability management and publish sustainability reports, their main focus in this endeavor remains unclear. Often, it seems that sustainability issues are pursued more coincidentally than with clear strategy."

### First Wave of CSR: The Principle of Legitimacy

Wood (2010) asserts that the intellectual roots of the CSR and CSP scholarship can be found in the general systems theory of 1950s. General systems theory was a development over the closed systems view of the business organizations that was in vogue in the early 20<sup>th</sup> century as evident in the writings of Taylor (1911), Weber (1948) and Fayol (1967). The closed systems view facilitated the rational approach to structuring and managing. These thinkers looked at business organizations as isolated systems and ignored the outside environmental influences. Biologist Ludwig von Bertanlanffy is credited to develop the open systems theory during 1930-60. By late 1950s theoretical psychologists like Boulding (1956) started applying the open systems theory to organizational structures like governments and businesses. He was among the first who

emphasized that firms as open systems are highly complex and reactive and that the system components are loosely related.

The systems characteristic of the business organization is that it accepts inputs from the outside environment and emits output into that environment. Hence businesses regularly interact with its environment and exchanges and processes feedback. Open systems have porous boundaries that allow feedback exchanges from outside and inside the business. Thus one aspect of Corporate Social Responsibility is that it is related to cost and benefits that result from business organization's interaction with the external environment, which includes social, cultural, legal, political, economic and natural dimensions (Wood 2010).

Bowen (1953, p.6) in his landmark book *Social Responsibilities of the Businessman* gave the initial definition of social responsibility of businessman:

"It refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society."

With this simple proposition, Bowen initiated the modern debate about social responsibility (Wartick and Cochran 1985). Bowen's early work had such a profound impact on the modern day understanding of social responsibility issues that Carroll (1999) proposed his name for the title of the "Father of Corporate Social Responsibility."

Davis (1960) gave the initial push to the notion of what is now termed as integrative view of CSR that is, economic and social responsibility are not mutually exclusive but they can enhance the long term profitability of the company. David (1960, p. 70) asserted that "Some socially responsible business decisions can be justified by a long, complicated processes of reasoning as having a good chance of bringing long-run gain to the firm, thus paying back for its socially responsible outlook ."

Interestingly Davis is recognized more for giving the famous "Iron Law of Responsibility," which states that "*social responsibilities of businessmen need to be commensurate with the social power*." He further stated that in case of equivalence between the social responsibility and power, avoidance of social responsibility leads to gradual erosion of social power on the part of businesses.

McGuire's (1963) book, *Business and Society* echoed and extended the work of Bowen by laying out the rationale for greater social responsibility for businesses and the prospect of CSR as a viable business strategy. McGuire (1969) identified four approaches to CSR:

(1) Traditional view that CSR has no role in business

(2) Enlightened view that CSR serves corporate self-interest

(3) Responsible view that CSR may or may not pay but it is the right thing to do

(4) Confused view that justifies CSR on ethical grounds while at the same time hoping that it will pay off for the company.

The early writers were very strong in asserting the social responsibilities of the businesses. This lead to moral implications of CSR, that is, firms should work to increase societal benefits and reduce or eliminate ill effects of their activities. Otherwise, companies would fail to adapt to their environments, loose access to critical resources, challenged by external stakeholders or they can even loose legitimacy and thus the right to exist (Thompson

1967). So what is legitimacy? A corporation is legitimate when it is judged to be "just and worthy of support" (Dowling & Pfeffer 1975; Nasi et al. 1997). Suchman (1975) noted that legitimacy is neither the abstract measure of rightness nor it is a characteristic of the firm but rather it is a measure of societal perceptions of the adequacy of corporate behavior. It is a measure of the attitude of society towards a corporation and its activities, and is a matter of degree from highly legitimate to highly illegitimate (Nasi et al. 1997). Sethi (1975) asserted that

"Corporations, like all other social institutions, are an integral part of the society and must depend on it for their existence, continuity, and growth. Corporations therefore constantly strive to pattern their activities, the nature of inputs they utilize, the type of outputs they produce, and the manner in which outputs are distributed so that they are in congruence with the goals of the overall social system. The quest for legitimacy by the corporation and doubts by its critics are the crucial issues in the concept of corporate social responsibility. A clearer way to evaluate corporate social performance is to use the yardstick of legitimacy (p 60)."

However Walton's (1967, p. 18) book titled *Corporate Social Responsibilities* emphasized on the degree of voluntarism in its definition of social responsibility:

"In short, the new concept of social responsibility recognizes the intimacy of the relationships between the corporation and society and realizes that such relationships must be kept in mind by top managers as the corporation and the related groups pursue their respective goal."

Three primary questions that scholars tried to address in the first wave of CSR development were: (1) rationale for social responsibility of businesses, (2) to whom are the corporations responsible and (3) for what exactly they are responsible. Hence they broadly emphasized on the principle of legitimacy and managerial discretion as the rationale for greater social responsibilities of the businesses. This brings us to two fundamental premises on which Bowen's notion of CSR rested upon. Wartick and Cochran (1985) discuss these premises in

some detail. The first is that since business exists at the pleasure of the society, its behavior must fall within the guidelines set by the society. Hence similar to the Government, business has a social contract (set of rights and responsibilities) and this contract is the source of business legitimacy. This social contract is the vehicle through which business behavior is made to conform to society's objectives. The second premise underlying CSR is that business acts as a moral agent within the society. Donaldson (1982) justifies it by saying that corporations have the capacity to use moral rules in decision making and they can influence politics and rules. Hence these two ideas of social contract and moral agency have provided the basic premises of the CSR concept.

The structural principle of CSR in the Wood's (1991) model of CSP recognizes the first wave of CSR development by including the 'legitimacy principle' which addresses business as a whole (institutional perspective), a 'public responsibility principle' which applies to a particular company (organizational perspective) and 'discretionary principle' which refers to duties of managers and employees as moral agents (individual perspective). Wood's model will be discussed in more detail under the section of third wave of CSR.

### Second Wave of CSR: Corporate Social Responsiveness

The first phase of CSR development primarily dealt with the theoretical underpinning that corporate social responsibility implied, and it largely grew from what McGuire (1969) termed as the 'responsible view of CSR' that is, CSR may or may not pay but it is the right thing to do. Frederick (1986) summed up the idea of CSR in phase 1 as: "Business corporations have an obligation to work for social betterment." It is quite interesting to note the tentativeness of first wave scholars in referring to the positive economic gains from corporate social responsibility, as

evident in Davis's (1960) study. He held that some socially responsible business decisions can be justified by long, complicated processes of reasoning as having a good chance of bringing longrun gain to the firm however he primarily stressed on the Iron Law of Responsibility in relation to social power and social responsibility. A notable effort in this regard was made by The Committee for Economic Development (CED), a non-governmental organization and it comprised of many business members. They issued a very important report in 1971 (CED 1971). CED (1971, p. 11) observed that *"business functions by public consent and its basic purpose is to serve the needs of the society."* They invoked the premise of social contract between the business organization and society and urged business leaders to make contributions to social well being beyond the scope of taxes, jobs and provision of goods and services.

Wood (2010) observed that in the 1970s, the idea of corporate social responsibility gave way to corporate social responsiveness. Frederick (1994) outlined the conceptual transition in business and society scholarship, from philosophical-ethical concept of CSR to the action oriented managerial concept of corporate social responsiveness and termed this phase as  $CSR_2$ and previous phase as  $CSR_1$ . He referred to the growing sense of dissatisfaction over the absence of operational meaning of CSR. It was not clear whether social responsibility refer to those corporate actions which are taken to conform to prevailing legal rules or only those that transcend the law. Does it refer to those that conform to current public expectations, whether encoded as law or not, or those that anticipate possible future social needs?

Nasi et al. (1997) presented the evolution of corporate social responsiveness by exploring three alternative perspectives on corporate issues management: legitimacy theory, stakeholder theory and issue life cycle theory. The implicit objective was to investigate that why scholars felt the need to go beyond CSR and explore  $CSR_2$ . Managing the legitimacy gap was identified as

one of the possible reasons behind this transition. Dowling and Pfeffer (1975) defined a legitimate firm if it is "just and worthy of support." At this point two related questions can be legitimately posed:

(1) How does a legitimacy gap arise? According to Sethi (1975, 1979) there are two primary sources of legitimacy gap. First is the change in societal expectations that widens the gap between the corporation's image and societal expectations. CED (1971, p. 16) supported Sethi's conclusion by noting that the social contract between the business and society is changing in substantial and important ways:

"Business is being asked to assume broader responsibilities to society than ever before and to serve a wider range of human values. Business enterprises, in effect, are being asked to contribute more to the quality of American life than just supplying quantities of goods and services. In as much as business exists to serve the society, its future will depend on the quality of management's response to the changing expectations of the public."

Second source of legitimacy gap is if the new information about the activities of the firm is suddenly revealed. The Enron scandal revealed in 2001 is a useful example in this case. Top executives of the company were able to hide billions of dollars in debt from failed deals and projects. Enron had to file for bankruptcy under Chapter 11. Employees and shareholders lost nearly \$11 billion dollars due to failure of Enron on the stock market. Similarly, the market structure and corporate practices of Archer Daniels Midland (ADM) lead to one of the largest price-fixing/cartel collusion activities in recent times. ADM was able to overcharge the North American buyers of lysine (an additive used in animal feed) and

citric acid by \$250 million. As a result they ended up paying five times that amount in public penalties, private damages, and legal costs.

(2) What should a corporation do if it loses legitimacy and as a result has to face various obstacles in the form of punitive actions, difficulty in hiring good talent and bad corporate image in general?

As previously mentioned legitimacy is neither the abstract measure of rightness nor it is a characteristic of the firm but rather it is a measure of societal perceptions of the adequacy of corporate behavior. Therefore, according to Wood (2010, p. 52): *"the search for 'responsibilities' ceased and focus shifted to corporate action without reference to ethical underpinning that 'responsibility' or 'duty' implied*." The two questions mentioned above sufficiently explain the shift in focus from legitimacy towards corporate action. Frederick (1994) described the phase of CSR<sub>2</sub> as marked by studies done to investigate how companies should respond to societal demands. If first wave of CSR developed from the 'responsible view', the second wave of CSR can be sourced to what McGuire (1969) termed 'enlightened model of CSR', that is CSR serves corporate self-interest.

The conceptual basis of categorizing corporate actions is usually made according to Sethi's (1979) typology of corporate responsiveness (CSR<sub>2</sub>) as reactive, defensive, responsive and proactive. Several other scholars have provided conceptual schemes similar to Sethi's scheme in order to describe the responsiveness continuum. For instance Wilson (1974) has proposed four possible business strategies – reaction, defense, accommodation and proaction. Similarly McAdam (1973) described four possible ways that a corporation may choose to respond to social pressure: fight all the way, do only what is required, be progressive and lead the industry. David & Blomstrom (1975) describe alternative responses as follows: withdrawal,

public relations approach, bargaining and problem solving. All these schemes go quite well with each other.

Sethi (1979) developed a conceptual framework to analyze and evaluate business response patterns under different temporal and sociocultural conditions. Corporate responses are classified along three dimensions:

(1) Corporate Social obligation: It is the response to market forces or legal constraints (Sethi 1975). The criteria for legitimacy in this arena are economic and legal and it is met by the firm's ability to compete for resources and by conducting its business within the legal constraints imposed by societal norms and systems.

(2) Corporate Social Responsibility: According to Sethi (1979, p. 66):

"Social responsibility does not require a radical departure from normal patterns of corporate activities or behavior. It is simply a step ahead- before the new societal expectations are codified into legal requirements. While the concept of social obligation is proscriptive in nature, the concept of social responsibility is prescriptive."

(3) Corporate Social Responsiveness: Primary characteristic of social responsiveness is anticipation of societal needs by corporations. It appears from the formulation of  $CSR_2$  that responsive firms minimize the risk of legitimacy gap because the issue here is not how corporations should respond to social pressures, but what their long-run role in a dynamic social system should be. Hence the firm is expected to anticipate the changes that may flow from their current activities leading to change in the nature of social contract between the business and society. While the concept of social responsibility is prescriptive in nature,

activities related to social responsiveness are proactive, i.e., anticipatory and preventive in nature (Sethi 1975, 1979).

He further analyzed the quality of corporate responsiveness on the basis of time elapsed between the emergence of a problem and its ultimate solution into four categories: preproblem stage, problem identification stage, remedy stage and relief stage. Strand (1983) identified the subfields of CSR as organizational social responsibility, organizational social responsiveness and organizational social response experts. The distinct research questions that he identified in the responsiveness domain were: "By what processes do (should) organizations gather and disseminate information on social demands? By what process do (should) organizations make decisions on social demands? By what processes do (should) organizations implement their decisions

Frederick (1994, p 154) defined  $CSR_2$  as "the capacity of a corporation to respond to social pressure." The key questions identified in  $CSR_2$  are: Can the firm respond? Will it respond? How does it respond? To what extent the response is? And with what effect? In order to answers these questions one has to search for firm's mechanisms, procedures, arrangements, and behavior and response patterns, and collectively that would indicate the capability of the company to respond to social pressures. It is very clear from these aspects of  $CSR_2$  that while the debate over the usefulness of  $CSR_1$  was of philosophical nature,  $CSR_2$  gave up philosophical articulations in favor of managerial approach. However it is interesting to note that Carroll (1979) equated  $CSR_2$  with organization's philosophy.

The anticipation is that this shift in the focus will help empirical scholars to at least partially operationalise  $CSR_2$  in the CSR models and investigate how it relates to  $CSR_1$  and CSP.

One of the pertinent questions that Business and Society scholars may now be able to address is: Whether those firms who have transcended the domains of social obligation and social responsibility and are currently operating in the realm of social responsiveness are able to minimize the risk of legitimacy gap which is always an untamed factor in the previous two stages. In the case of affirmative response it would become very interesting as well as useful to identify the similarities in business processes, systems and policies that contributed to the development of such firms. Firms who are very old say more than 100 years have sustained many societal pressures, regulatory changes, wars and natural disasters. The very fact that they exist till date amply answers the question of legitimacy. What remains to be explored is the identification of systems and policies that they had in place that allowed them to respond to drastic as well as day to day challenges coming from the outside environment. Did they follow triple bottom line or 3Ps approach or they had a completely different method of aligning with their stakeholders? The answers to these questions have the potential to alter the way we think about corporate social responsibility as a business strategy of the firm.

## Third Wave of CSR: Corporate Social Performance (CSP)

The first two waves of CSR development laid out the principle of legitimacy and the processes by which firms responds to societal demands and pressures. The principle of legitimacy was based on the twin premises of social contract and moral agency and the processes of responsiveness allowed businesses and managers to respond to change in societal conditions and demands. Still one important component was missing from the CSR model: the Corporate Social Performance (CSP). Two major theoretical developments/models, one coming from Carroll's 1979 CSP model and another from Wood's 1991 CSP model are the hallmarks of the CSR development during the third phase. The third wave of CSR development can also be

viewed as an integrative phase where business and society scholars presented theories and models that helped the CSR literature to accommodate 'seemingly' competing constructs like  $CSR_1$  and  $CSR_2$  and align them within the same framework as complementing concepts.

Carroll (1979) is credited to have proposed the first conceptual model of CSP. The essential aspects of Carroll's CSP model are social responsibilities, social responsiveness and social issues. He argued that a holistic definition of Total Social Responsibility must address the entire range of obligations that businesses have towards the society. These obligations can be categorized into economic, legal, ethical and discretionary aspects of corporate performance. He then identified the social issues that business must address and at the same time he appreciated the fact the social issues vary across time and industries. Carroll (1979, p. 501) asserted that:

"We are left with a recognition that social issues must be identified as an important aspect of corporate social performance, but there is by no means agreement as to what these issues should be."

He followed quite similar scaling scheme of  $CSR_2$  (corporate social responsiveness) to the one proposed by Sethi (1979). He defined  $CSR_2$  as the philosophy, mode or strategy behind the business (managerial) response to social responsibility and social issues. Social responsiveness in Carroll's model ranged on a continuum of no response (do nothing) to a proactive response (do much). He followed Wilson's (1974) scheme of responsiveness.

Carroll's CSP model is a cube where one axis is related to the definition of CSR in terms of economic, legal, ethical and discretionary responsibilities. The second aspect concerns the range of social issues that he identified for 1970s era and included consumerism, environment, discrimination etc. Therefore there is quite a bit of flexibility for the firms to identify the

components of social issues management. In fact social issues management is another thread of CSR literature that has expanded very rapidly during the last two decades. Most corporate sustainability rating agencies have developed sector-specific criteria for identifying pertinent issues for an industry, for instance DJSI and KLD. Some issues are identified as relevant across all the industries while other social issues are considered to be industry specific. There is variation in issues across time as well due to change in the external environment and social contract. Change in social issues and the ability of a firm to anticipate and adjust to them remind us of the first wave scholars' vision of a responsible firm, that is, a socially responsible firm would be willing to respond to alterations in the nature of the social contract.



Figure 10: Carroll's Model of Corporate Social Performance (1979)

Adapted from: Carroll, Archie B. 1979. "A Three-Dimensional Conceptual Model of Corporate Performance." *Academy of Management Review* 4 (4): 497–505

Finally there is the corporate social responsiveness (CSR<sub>2</sub>) continuum on the third axis. Unlike

many other studies which suggested that CSR<sub>2</sub> should be the focus instead of CSR<sub>1</sub>, Carroll's model included CSR<sub>2</sub> as well as CSR<sub>1</sub> as one of the aspects to be considered for improving CSP. Carroll's model was a path breaking work because it was among the first few models which intended to assist firm managers to understand their CSR activities and appreciate that CSR is not separate from economic performance but rather it is just one part of total social responsibility of the firm. The model also places ethical and discretionary expectations into a rational economic and legal framework. Zenisek (1979) also agreed that economic and social responsibilities should not be viewed as competing obligations but they are rather components of overall responsibilities of business.

According to Wartick and Cochran (1985) CSP model: "*CSP is the three dimensional integration of corporate social responsibility* (*CSR*<sub>1</sub>), corporate social responsiveness (*CSR*<sub>2</sub>), and social issues." They asserted that Carroll's CSP model differed from many scholars (Buchholz 1977, 1982; Friedman 1962; Heyne 1968; Preston & Post 1975, 1981) by integrating economic and public policy responsibility into the definition of social responsibility. This integrative view was also distinct from the separatist vision of many other business and society scholars (Ackerman & Bauer 1976; Frederick 1978; Murphy 1978) who were in favor of disintegrating responsibility from responsiveness and issues. The CSP model in the words of Wartick and Cochran (1985, p. 758): "*reflects an underlying interaction among the principles of social responsibility, the process of social responsiveness, and the policies developed to address social issues.*" Thus Carroll's model according to Wartick and Cochran (1985) expanded the scope of social responsibility and the principle, process and policy approach provided the

appropriate framework for the firm to evaluate its overall efforts towards fulfilling its social responsibility.

In Wartick and Cochran (1985), the principles of CSR were taken from Carroll (1979), namely economic, legal, ethical and discretionary. These principles resulted from firm's social contract and firms as moral agency. The processes of responsiveness were also in line with Carroll's scheme, reactive, defensive, accommodative and proactive. Policies were identified to manage social issues, including policies of issues identification, issue analysis and response development. Their model updated Carroll's work and made it more robust and logical by identifying, criticizing and synthesizing the three challenges to CSR: economic responsibility, public responsibility and social responsiveness.

Wood (1991) revisited Carroll's CSP model and its extensions and proposed her CSP model in terms of three structural categories: Principles, Processes and Outcomes. Wood (2010, p. 53) argued that:

"Carroll might be accurately describing how managers saw their social responsibilities; they were not taking into account the sociological complexity of their roles in society and the effects of their actions had on others. In short, they were responding as though they managed rationally in a closed system."

Wood's model was based on systems framework where the CSR variables were organized into structural as opposed to philosophical principles. The CSP model included principles of responsibility as inputs, processes as throughputs and outcomes as outputs. Wood revised some of the elements of the model in her 1994 book titled "Business and Society" as shown in figure 11.

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PRINCIPLES OF SOCIAL RESPONSIBILITY	>	PROCESSES OF SOCIAL RESPONSIVENESS	>	OUTCOMES & IMPACTS OF PERFORMANCE
Legitimacy: businesses that abuse the power society grants them will lose that power.		Environmental Scanning: gather the information needed to understand and analyze the firm's social, political, legal, and ethical environments.		Effects on people and organizations.
Public Responsibility: Businesses are responsible for outcomes related to their primary and secondary areas of involvement with society.		Stakeholder Management: active and constructive engagement in relationships with stakeholders.		Effects on the natural and physical environments.
Managerial Discretion: Managers and other employees are moral actors and have a duty to exercise discretion toward socially responsible, ethical outcomes.		<b>Issues/Public Affairs</b> <b>Management:</b> a set of processes that allow a company to identify, analyze, and act on the social or political issues that may affect it significantly.		Effects on social systems and institutions.

Adapted from: Wood, Donna J. 1991. "Corporate Social Performance Revisited." *Academy of Management Review* 16 (4) (October): 691–718.

The structural principles of Wood's model of CSP were very similar to Carroll's and Wartick and Cochran's models. It included a 'legitimacy principle' which addressed the business institution, a 'public responsibility principle' which applied to a particular firm and a 'discretionary principle' which referred to social duties of firm's managers as moral agents. However the process of responsiveness was not the same as in Carroll's and Wartick & Cochran's model. Instead of signaling the mode of response, Wood's model had three specific sub-categories of processes: environmental scanning, stakeholder management and issues management. Environmental scanning referred to information needed to analyze firm's legal, ethical, social and political environments. In Carroll's model environmental scanning at best seems to be implicitly assumed because there is no mention of the methods that a firm can employ to categorize its social issues based on the four types of responsibilities: economic, legal, ethical and discretionary.

The critical missing piece in Carroll's model and its extensions is the outcome variable. While Carroll did not have the outcome variable, Wartick and Cochran had policies of social issues management as the outcome variable. Wood (1991, p. 692) criticized the approach of Carroll and Wartick and Cochran towards CSP over the use of the term 'performance' in their models:

"The term performance speaks of actions and outcomes, not of interaction or integration. Thus, the definition of the CSP model, which integrates these various concepts, could not define CSP itself unless an action component was added."

Wood's (2010) definition of outcomes is "what counted in terms of performance and outcomes was what happened because of corporations and their employees did..." Wood's (1991) depiction of CSP views the business organization ('corporate') as the locus of actions that have consequences for stakeholders and society as well as for itself. The outcome variable included policies, programs, practices, effects on stakeholders, and effects on the society at large.

It is very interesting to note that Wood's model treated corporate financial performance (CFP) as one of the dimensions of overall corporate social performance and not as a competing
or contrasting type of performance. She termed the search for statistical link between CSP and CFP as 'misguided' at best and at worst 'disingenuous'. She criticized the notion of CSP as 'doing good' for external stakeholders as very narrow approach to the larger and more comprehensive view of CSP. Therefore the investigation of CSP-CFP relationship in many studies (Ziegler & Schroder 2010; Sonnenberg & Hamann 2006; Lee et al. 2011; Waddock 1997) is based on the misunderstanding that they compete for organizational resources and managerial focus.

Many extensions of the Wood's model came thereafter (Kang 1995; Swanson 1995, 1999; Mitnick 1993, 1995, 2000). Kang (1995, p. 500) criticized the 'nomological hierarchy' in Carroll's model which is implicit in his ordering and weighing of social responsibility domains: economic, legal, ethical and discretionary which might have followed from Carroll's (1979) assertion that:

"These four categories are.... neither cumulative nor additive. Rather they are ordered in the model only to suggest what might be termed their fundamental role in the evolution of importance."

Kang argued that in the Carroll's world managers may be too focused on economic performance such that they may find very easy justifications for violating ethical standards or even legal requirements, if doing so improves economic returns for the company.

Kang (1995) flipped the Carroll model to include moral, social, economic and discretionary responsibilities. Kang's argument was that once the firm has fulfilled its legal and ethical responsibilities, it is free to generate profits. Any mention of social responsibility before the fulfillment of legal and ethical obligations would signal hypocrisy on the part of the firm. By

flipping the Carroll's model, Kang was able to link the Wood's three principles of CSR domain (legitimacy, public responsibility and managerial discretion) with the inverted Total Social Responsibility pyramid in Carroll's model. Moral agency or discretionary responsibilities is linked with managerial discretion in Wood's model, while at the organizational level, Carroll's legal responsibilities relate to firm specific responsibilities (Woods' principle of public responsibility).

Figure 12: Linking the domains of Corporate Social Responsibility in Carroll's and Wood's Models



Adapted from: Kang, Y.C. 1995. "Before-profit Corporate Social Responsibility and Stakeholder Management Systems". PhD Dissertation, University of Pittsburgh.

At the institutional level, Carroll's economic domain is related with Wood's principle of legitimacy because businesses are given the status of social institutions as they provide goods and services to the society and hence are able to survive legitimately.

Swanson (1995) extended Wood's model by incorporating 'duty-aligned perspective' to reflect the importance of business ethics sufficiently. Swanson asserted that managers cannot legitimately choose socially irresponsible actions under the pretext that they were forced to do so or their choice set was limited. Swanson proposed that there are three broad ways in which firms can contribute to evolution of a 'good society': (1) by designing policies according to the normative standards, (2) by incorporating positive duties specific to the level of managers, organization and institution and (3) by addressing moral motivation.

The discussion and findings from the three phases of CSR and CSP models has been summarized in the table14. For each phase, primary research questions, key concepts, overlapping concepts, key conclusions and major scholarly contributions have been identified.

Phase	Primary Research	Primary Concepts	Overlapping	Important conclusions	Major
	Questions		Concepts	_	Contributions
First Phase (The Principle of Legitimacy)	<ol> <li>(1) Rationale for CSR for businesses?</li> <li>(2) To whom are corporations responsible?</li> <li>(3) For what are they responsible?</li> </ol>	<ol> <li>(1) Corporate Social Obligation</li> <li>(2) Corporate Social Responsibility (CSR<sub>1</sub>)</li> <li>(3) Business legitimacy</li> </ol>		<ul><li>(1) Iron law of responsibility</li><li>(2) Moral implications of CSR</li></ul>	Bowen (1953) Davis (1960) McGuire (1963, 69) Thompson (1967) Walton (1967)
Second Phase (Corporate Social Responsiveness)	<ul> <li>(1) How does a legitimacy gap arise?</li> <li>(2) How to close legitimacy gap?</li> <li>(3) How does a firm respond to social pressures?</li> <li>(4) To what extent the response is?</li> </ul>	Corporate Social Responsiveness (CSR <sub>2</sub> )	<ul><li>(1) Corporate</li><li>Social</li><li>Obligation</li><li>(2) CSR<sub>1</sub></li></ul>	<ol> <li>(1) Capacity to respond to societal pressure is CSR<sub>2</sub></li> <li>(2) CSR<sub>1</sub> and CSR<sub>2</sub> are competing concepts</li> <li>(3) CSR<sub>2</sub> should replace CSR<sub>1</sub> for operational purposes</li> </ol>	Sethi (1979) Wilson (1974) Nasi (1997) Frederick (1994)
Third Phase (Corporate Social Performance)	<ol> <li>(1) Are CSR1 and CSR2 competing concepts?</li> <li>(2) What is the outcome of CSR<sub>1</sub> and CSR<sub>2</sub> in terms of CSP?</li> <li>(3) Is there a relationship between CSR<sub>1</sub>, CSR<sub>2</sub>, and CSP?</li> </ol>	<ul><li>(1) Social issues</li><li>(2) CSR processes</li><li>(3) Corporate Social Performance (CSP)</li></ul>	(1) CSR <sub>1</sub> (2) CSR <sub>2</sub>	<ul> <li>(1) CSR<sub>1</sub> and CSR<sub>2</sub> are complementary and not competing concepts</li> <li>(2) Corporate financial performance is a subset of CSP</li> <li>(3) Managerial focus of CSR programs</li> </ul>	Carroll (1979) Wartick & Cochran (1985) Wood (1991) Swanson (1995) Kang (1995)

Table 14: Summary of Literature Review on Theoretical developments in CSR and CSP

#### **Corporate Sustainability Assessment Methodologies**

The previous section on Literature Review summarized the theoretical studies on CSR and CSP. In the last two decades several Corporate Sustainability Assessment Methodologies have been developed and implemented to analyze and judge the CSP of companies across several industries. In this section, the four major assessment methodologies (DJSI, KLD, GRI and PSI) will be discussed to understand industry level efforts and developments in the evaluation of CSP. Analysis of these methodologies will also include investigation of similarities and differences with findings from the review of theoretical models of CSR.

## Dow Jones Sustainability Index

Dow Jones and Sustainable Asset Management (SAM) have been conducting annual Corporate Sustainability Assessment (CSA), which serves as the framework for measuring corporate sustainability performance (CSP) and forms the research backbone for the construction of the Dow Jones Sustainability Index. Companies are evaluated based on relevant sustainability criteria covering environmental, economic and social criteria. SAM analyzes 58 industries using industry-specific questionnaires. General criteria related to corporate action and performance measures such as corporate governance, human capital development and risk crisis management are defined and assessed to all the 58 sectors.

An integral part of the CSA process is the continuous monitoring of media and stakeholder commentaries and other publicly available information from consumer organizations, NGOs, governments and international organizations about companies'

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involvement and response to environmental, economic and social crisis situations that may have a damaging effect of their reputation and core business.

The media and stakeholder analysis is akin to the concept of corporate social responsiveness where the idea is to measure or assess the capability of the firm to respond to changes in external environment leading to revision in the social contract. In DJSI the focus is on the assessment of materiality issues because they can very rapidly widen the legitimacy gap if left unattended. The response of the corporations to these situations would also indicate their level of preparedness and ability to anticipate potential problems either arising from within or without. DJSI methodology in relation to responsiveness is closer to Wood's (1991) model which focused on processes through which firms respond to social demands and these processes are further subcategorized into environmental scanning, stakeholder engagement and social issues management.

Some of the key general sustainability criterions that are used in the DJSI ratings are:

- (1) Environmental Dimension: Environmental Management Systems, environmental policy, environmental reporting etc.
- (2) Economic Dimension: codes of conduct, corporate governance, risk and crisis management etc.

(3) Social Dimension: corporate philanthropy, human capital development, labor practices, talent retention etc.

Some of the key sector specific sustainability criterions that are used in the DJSI ratings are:

(1) Environmental Dimension: brand management (food manufacturers), price risk management (agribusinesses), customer relationship management (food retailers) etc.

(2) Economic Dimension: climate change governance (agricultural chemicals & fertilizers), environmental footprint (agribusinesses), water related issues (beverage producers) etc.

(3) Social Dimension: supplier standards (food retailers), stakeholder engagement etc.

Within each criterion, SAM looks for evidence of a company's awareness of sustainability issues and for evidence that it has implemented strategies to address them. SAM also evaluates firm's progress in implementing such strategies as well as the quality of its reporting on these issues. Therefore the questions in the company questionnaire are structured in a manner to evaluate following elements within each criterion:

(1) Awareness of the importance of these factors to its financial success.

(2) Determination of the potential financial impact (i.e. materiality) of its exposure to sustainability factors

(3) Implementation of strategies to manage these sustainability risks or to capitalize opportunities in a manner that is consistent with its business models

(4) Measurement of results in relation to stated KPIs in order to evaluate the effectiveness of its sustainability strategy

(5) Validation or external audit of stated results

(6) Quality of reporting or transparent communication of its corporate sustainability strategies and the extent to which stated targets have been met

SAM's framework for evaluating CSP has important implications for measurement of the constructs: CSR initiatives and corporate sustainability social performance. Elements 1 and 2

refer to the business case for corporate sustainability and materiality of sustainability issues respectively. Materiality is a broader goal to achieve as it relates to the firm's ability to create value emanating from social, environmental and economic dimensions of sustainability and not just the economic dimension. Element 3 calls for integration of corporate sustainability program with the core business strategy of the company, while elements 4, 5 and 6 relate to measurement of CSP and what steps companies are taking to establish the validity of their performance results.

### MSCI and KLD Ratings

MSCI's Intangible Value Assessment (IVA) methodology measures and analyzes companies' risk and opportunities arising from environmental, social and governance (ESG) issues. ESG research seeks to address three key questions:

- (1) What are the key ESG risks and opportunities in each industry?
- (2) Do companies have risk management strategies commensurate with the risk they face?
- (3) Do companies have strategies to capture potential opportunities in the ESG space?

It appears that MSCI focuses on the measurement of corporate social responsiveness in the sense of Carroll, Sethi, Wartick and Cochran and others who conceptualized corporate social responsiveness as firm's orientation towards social issues. They conceptualized the categories of corporate responsiveness continuum as reactive, defensive, responsive and proactive. The first question is however related to environmental scanning portion of the processes component in the Wood's CSP model.

MSCI offers a very interesting definition of an ESG key issue: "an environmental and / or social externality that has the potential to become internalized by the industry or the company through one of the following triggers:

- (1) Pending or proposed regulation
- (2) Potential supply constraint
- (3) A notable shift in demand
- (4) A major strategic response by an established competitor
- (5) Growing public awareness or concern

MSCI social issue definition echoes Sethi's (1975, 1979) work who has discussed two ways in which the elements of social contract can change and hence the legitimacy gap can widen for business organizations (change in societal expectations and revelation of new information about the firm and other related organizations). MSCI's approach to social issues also encompasses McGuire's (1969) enlightened view (triggers 2, 3 and 4) and responsible view (triggers 1 and 5) of CSR. Trigger 1 reflects social obligation and is external to the firm because it is initiated by regulatory authorities whereas trigger 5 is categorized as social responsiveness and it is within the domain of the company to act according to its own processes and policies. Triggers 2, 3 and 4 are categorized as social responsibility because one of the aspects of principle of legitimacy is that firms must make efforts to ensure uninterrupted supply of inputs, goods and services to be recognized as a social institution.

Similar to DJSI, MSCI also assesses industry specific issues. Where an ESG issues does not apply to an industry, it is not analyzed for those industries. For example water scarcity could constrain agricultural producers and beverages firms but it is not relevant banks and financial services. Agri-food firms' specific social or ESG issues have been presented in table 15.

# Table 15: MSCI's Key ESG Issues and Associated Risks and Opportunities for Agri-Food Supply Chain

ESG Issue	<b>Relevant Industries</b>	Risk / Opportunity		
Carbon Emissions	FAC, FMC, FSR, BVG, FPR	Increased costs, facility retrofits, operational		
		disruptions		
Energy Efficiency	FAC, FSR, BVG, FPR	Increased operational and energy costs		
Water Stress	FAC, FMC, FSR, BVG, FPR	Operational disruptions, loss of market access,		
		regulatory costs, higher water usage costs		
Biodiversity and Land Use	FAC	Legitimacy issues (loss of license to operate), litigation		
		by landowners, increased costs		
Raw Material Sourcing	FAC, FSR, BVG, FPR	Damage to brand value, failure to meet consumer		
		demand		
Human Capital	FAC, FSR, BVG, FPR	Failure to attract & retain talent, increase costs due to		
Development		high employment turnover, low productivity		
Labor Management	FAC, FMC, FSR, BVG, FPR	Labor unrest, reduced product quality, lost of growth		
		opportunities and market share, damage brand value		
Health & Safety	FAC, FSR, BVG, FPR	Decreased operational efficiency, litigations		
Supply Chain Labor	FSR, BVG, FPR	Decreased operational efficiency, litigations, loss of		
Standards		market share and market power		
Sourcing Issues	FSR, BVG, FPR	Reputational risk, compliance costs		
Product Safety & Quality	FSR, BVG, FPR	Damage to brand value, loss of consumer trust,		
		litigations, liability costs		
Nutrition & Health	FSR, BVG, FPR	Increased revenue from growing nutritional demand,		
		reputational damage		
Corruption & Instability	FAC, FMC, FSR, BVG, FPR	Loss of company assets, loss of market access,		
		operational disruptions		
Corporate Governance	FAC, FMC, FSR, BVG, FPR	Regulatory & legal risks, increased legitimacy gap,		
		reputational risk, restrictions on growth		

Source: Intangible Value Assessment Methodology, MSCI 2012

FAC: Fertilizer and Agricultural Chemicals, FMC: Farm Machinery, FSR: Food and Staples Retailing, BVG: Beverages, FPR: Food Products

In addition to sector specific key social issues, MSCI also accommodates company specific key issues when a company operates in a number of different business segments, or the company faces unique risks in a particular market. In these cases, the company is analyzed on that key issue. Company specific key issues affect the company ratings but it does not influence industry peers that are not materially impacted by that particular key issue.

Corporate social performance is assessed through MSCI's impact monitor, which is designed to provide timely, consistent and extensive assessments of ESG controversies involving publicly traded firms. The impact of each ESG related controversy on society is rated as none, minor, moderate, severe and very severe. Distinction is also made between negligent behavior (internal environment) and anomalous events (external environment).

## Global Reporting Initiative (GRI)

GRI is a sustainability reporting framework that discloses economic, environmental and social impacts and outcomes of firms during the reporting period. All companies operating in the U.S. are required to file financial statements through U.S. Securities and Exchange Commission. The SEC filings serve as the barometer for company's' financial performance. However there is no such universally accepted framework in case of sustainability reporting. Firms are not legally required to report their ESG performance. Even when they choose to do so, there is no uniformity in relation to what has to be reported and in what format. The GRI reporting framework is intended to fill this gap by serving as a generally accepted framework for reporting on an organization's economic, environmental and social performance. Hence GRI's focus is on measuring the corporate social performance based on triple bottom line criterions.

GRI based reports are anticipated to serve following purposes:

(1) Benchmarking and assessing sustainability performance of firms with respect to laws, norms, codes, performance standards, and voluntary initiatives. GRI's benchmarking approach is quite similar to the elements in Carroll's (1979) Total Corporate Social

Responsibility pyramid which is comprised of legal, economic, ethical and discretionary managerial responsibilities. The codes and laws correspond to legal obligations whereas performance standards indicate economic responsibility. Norms can be interpreted as uncodified social expectations from the business organization and it corresponds to ethics section of Carroll's pyramid where as voluntary initiatives are of discretionary nature because individual managers choose and identify social causes of materiality and endeavor to address them through firms' resources and participation of other stakeholders.

(2) Demonstrating how firms influences and is influenced by expectations about sustainability development. This aspect touches the notions of social contract and firm as a moral agency. Firms are affected by change in social expectations regarding corporate social responsibility and as a moral agent provide leadership or incentivize the society to pursue specific social goals. For instance Kroger (2011), a well known food retailer has adopted customer oriented environmental programs. They rewarded green behavior of their customers and as a result they were able to cut down their waste significantly in a very short span of time.

(3) Comparing performance within an organization and between organizations over time.

Firms who want to use GRI framework for sustainability reporting have to adhere to following reporting guidelines:

(1) Reporting Principles of Materiality, Stakeholder Inclusiveness, Sustainability Context and Completeness: The common objective behind these principles is to achieve transparency in relation to sustainability outcomes. GRI defines transparency as *"complete disclosure of information on the topics and indicators required to reflect impacts."* Principle of materiality ensures that information in a report should cover topics and indicators that reflect firm's significant ESG impact and how it will influence the assessments and decisions of stakeholders.

It is interesting to note that both DJSI and MSCI defined materiality as determination of the potential financial impact of its exposure to sustainability factors, however GRI's approach is not limited to those who have invested in the firm (employees, shareholders, suppliers etc) but also those who have other relationships with the organization (local communities, civil society). Therefore GRI's framework appears to be better suited to operationalise Wood's (1991) notion of corporate social responsiveness, especially the environmental scanning and stakeholder management aspects of firms' processes. Stakeholder engagement processes can serve as tools for understanding the 'reasonable' expectations and interests of stakeholders.

The principle of sustainability context enhances the contextual specificity of sustainability initiatives and performance of companies. The underlying question is how an organization contributes or aims to contribute in the future, to the improvement or deterioration of economic, environmental, and social conditions, and trends at the local, regional or global level.

(2) Reporting Guidance: It describes the various options that companies have when making decision on what to report on. Reporting guidance is available for defining report content and setting the report boundary. Appropriate report content is determined by the purpose and experience of the organization, and the reasonable expectations of organization's stakeholders. These reporting criterions bring out the ability of GRI framework to customize sustainability reports on a case by case basis. It would also help in understanding the impact of organizational culture in defining their role in the society.

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Companies are required to identify relevant topics and related indicators by undergoing an iterative process using principles of materiality, stakeholder inclusiveness, context and guidance on setting the report boundary. Relevant topics are identified using GRI's guidelines and applicable sector supplements. GRI has specific guidelines for the food processing sector. Using principle of materiality firms can rank the selected topics to decide which ones will be emphasized. GRI framework allows distinguishing between core and additional indicators.

(3) Standard Disclosures: GRI based CSR reports have to have three different types of disclosures:

(a) Strategy and Profile: These disclosures set the overall context for understanding organizational performance such as its strategy, profile, and governance structure.

(b) Management Approach: These disclosures cover how an organization addresses a given topic in order to provide context for understanding performance in a specific area. The management approach to CSR is similar to Fredrick's (1994) view of corporate social responsiveness: "how companies should respond to societal demands."

(c) Performance Indicators: These indicators convey comparable information on the economic, environmental and social performance of the organization. Wood (1991) asserted that a complete model of CSP must have an outcome variable otherwise managers will never get to realize the impact of their actions on the external environment. GRI framework further categorizes CSP into three subcategories economic, environmental and social.

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### Pacific Sustainability Index

The Roberts Environmental Centre at Claremont McKenna College maintains and publishes PSI using two systematic questionnaires to analyze the quality of sustainability reporting: a base questionnaire common across all sectors and a sector-specific questionnaire. This approach is similar to DJSI, MSCI and GRI who also make distinction between general and sector specific evaluation of sustainability performance. The survey questions are derived from over 900 corporate sustainability reports. PSI rating scores are based on three criterions:

(1) Intent scoring criteria: Intent category measures the coverage and company's involvement in environmental and social issues. PSI examines the intentions, vision and plans and also looks for evidence of specific actions taken to implement them. However PSI scoring sheets indicate that analysts only investigate whether the company has the mission/vision statement but they do not examine the content of such policy statements. It is however consistent with PSI's objective because they are primarily concerned with the sustainability reporting and do not examine the after effects in detail unlike MSCI or DJSI.

(2) Reporting Scoring Criteria: Companies are evaluated for the transparency in publicly discussing their dealings with social issues independent of success in making improvements. This approach is quite different from the other three indices because PSI does not consider the principle of materiality while scoring the CSR initiatives.

McGuire (1969) identified four approaches to CSR: (a) traditional view that CSR has no role in business, (b) enlightened view that CSR serves corporate self-interest, (c) responsible view that CSR may or may not pay but it is the right thing to do and (d) confused view that justifies CSR on ethical grounds while at the same time hoping that it will pay off for the company. DJSI, MSCI and GRI put emphasis on the enlightened view of CSR while evaluating social performance whereas PSI rewards those firms who are socially responsible even though the companies fail to identify the strategic fit between their business policies and social responsibility.

(3) Performance Scoring Criteria: Sustainability performance of firms is compared with peers during the same reporting period and also with its own performance during the previous reporting period.

PSI does not track the performance of the firms on a regular basis. Their analysis is based on company based websites and they do not examine information from external sources.

# Summary of Indices: Inventory of Social Initiatives and Key Performance Indicators

Reporting principles and frameworks, company questionnaires and research methodologies of DJSI, MSCI, GRI and PSI, were examined to prepare an inventory of major sustainability initiatives and key performance indicators. Environmental efforts and performance were categorized into air, water, energy, waste and miscellaneous items. Similarly social aspects of corporate responsibility were subcategorized into community, employee, diversity, human rights and miscellaneous items. Economic initiatives and outcomes are further divided into product, corporate governance, animal welfare and miscellaneous categories.

Table 16 consists of general and agri-food specific corporate social initiatives and performance indicators. A partial list of general indicators and corporate initiatives include: carbon emissions and carbon footprint, energy issues, water stress, biodiversity and land use, toxic emissions and waste, packaging materials and waste, clean energy, human capital development, labor management, health and safety, supply chain labor standards, corporate governance etc. Similarly some of the societal and institutional issues and performance indicators specific to the agri-food firms are: sourcing policy, product safety and quality, customer wellness etc.

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	DJSI	MSCI	GRI	PSI
Environmental				
Environmental Management Systems	Х			X
Environmental education		X		Х
Reduce contribution to climate change	Х			Х
Reduce energy consumption		Х	Х	
Increase use of renewable energy		Х	Х	Х
Recycling waste		Х		Х
Waste water recycling		Х	Х	Х
Reduce packaging	Х	Х	Х	Х
Green purchasing		Х	Х	Х
Reduce company's usage of raw material		Х	Х	Х
Reduce emissions		Х	Х	
Conservation of natural habitat & ecosystems	Х			Х
Third party Certification	Х	Х		
Economic				
Customer wellness & nutrition		X		Х
Communicate nutrition information		Х		
Standards related to marketing communication		X		
Codes of conduct is followed				Х
Initiatives taken to avoid corruption	Х		Х	Х
Animal welfare initiatives		X		
Stakeholder engagement	Х		Х	
Brand management	Х			
Risk & crisis management	Х	X		
Innovation management	Х			
Initiatives to support locally based suppliers			Х	
Sustainable sourcing policy			Х	
Social				
Charitable giving	Х	Х		
Community development				
Bottom of pyramid efforts	Х	Х		
Supporting NGOs		Х		
Initiatives for employees' career development	Х		Х	Х
Occupational health & safety	X	X	X	Х
Work-life benefits		X	X	
Employee grievance resolution initiatives	Х			
Employee volunteerism in ESG projects	Х			X
Tracking employee satisfaction (surveys)	Х			X
Free association			X	Х
Promoting work force diversity	Х	X	X	Х
Women & minority contracting		X		

# Table 16: Inventory of Corporate Sustainability Initiatives

Both DJSI's and MSCI's evaluation scheme is based on identifying risks and opportunities that are associated with ESG issues and controversies. Increased operations cost and operational disruptions were linked with carbon emissions, energy inefficiency, water stress and human capital development. Reputational risks, loss of market access and damage to brand value is associated with sourcing issues, labor management, supply chain labor standards, product safety and nutrition and health. Corruption and corporate governance issues including CEO compensation and diversity concerns are subject to regulatory and legal risks, increase in legitimacy gap, restrictions on growth, loss of company assets, loss of market access and operational disruptions. Opportunities for firms using environmental technologies and/or developing or refurbishing green buildings include increased access to markets, higher revenues and market share in specific market segments due to early mover advantage (MSCI 2012). Food firms trying to minimize health risks are more likely to benefit from new product developments, strengthening of brand image and at the same time they minimize the risk of unanticipated shift in consumer taste and preferences. Sethi (1979) probably referred such firms as being responsive and not just responsible.

The section on the review of theoretical model of CSR and CSP focused on understanding why firms should undertake socially responsible activities and what are the major outcomes of such an approach. The theoretical models however did not inform much about how to measure CSP and contextual specificity of corporate sustainability programs and alignment of such activities with the business strategy of the company.

Recent developments in the arena of Corporate Sustainability Assessment Methodologies address the issue of measuring CSP to some extent. Both, DJSI and MSCI have incorporated detailed surveys, evaluation of industry specific sustainability initiatives and media and stakeholder analysis in the assessment process. The GRI's focus on evaluating the materiality of companies' sustainability initiatives is certainly a forward step in the direction of helping businesses in identifying the sustainability context of their initiatives. The theoretical models did not clearly spell out these aspects of measuring CSP. However the utility of CSA methodologies are limited when it comes to assessing the overall strategic fit between sustainability initiatives and processes with the business strategy of the company.

The CSA methodologies are an improvement over the theoretical models of CSR and CSP. However there is a missing link between the theoretical constructs and how these constructs are operationalised by CSA methodologies. Therefore, on one hand the theoretical models have primarily dealt with the philosophical aspects of corporate sustainability, on the other hand the CSA methodologies have focused on the practitioner's approach and hands on evaluation of sustainability programs. The following section seeks to align these two approaches to Corporate Sustainability within a common framework.

### **Research Summary: A Conceptual Model of Corporate Sustainability Performance**

The primary purpose of this paper is to posit a new model of CSP. By synthesizing the review of three distinct generations of CSR and CSP theoretical frameworks and several currently used corporate sustainability assessment methodologies, a conceptual model of CSP can be proposed.

The CSP conceptual model is comprised of three primary constructs and associated measurable and ordinal concepts. These constructs are CSR processes, CSR initiatives, and CSP.

Several research propositions are put forward and discussed below to investigate links between three primary latent constructs and associated concepts and also among the constructs themselves. This would allow for the identification of linkages that are very similar to a nomological network for the CSP conceptual model. Relationships in this nomological network may relate to linkages between different theoretical constructs (for instance between CSR process and CSP), and theoretical constructs to observables (for instance between CSR process and environmental scanning).

### CSR Processes

CSR processes are related to various methods that a company uses to detect sustainability issues and concerns. Since company policies would also depend on their attitude and maturity in addressing corporate sustainability issues; the conceptual variable CSR processes is comprised of CSR orientation, environmental scanning, and engagement with multi-stakeholder groups (MSGs).



Figure 13: Conceptual Model of Corporate Sustainability Performance and Research Propositions

<u>CSR Orientation</u>: CSR orientation is the term used to describe the philosophy, mode or strategy behind company's response to CSR responsibilities and issues (Carroll 1979). The emphasis is on 'degree' and 'kind' of managerial action rather than mere acceptance of CSR responsibilities by the management. Sethi (1979) conceptualized the categories of corporate actions as reactive, defensive, responsive and proactive. Several other scholars have provided conceptual schemes similar to Sethi's scheme in order to describe the responsiveness continuum. For instance Wilson (1974) has proposed four possible business strategies – reaction, defense, accommodation and proaction. Similarly McAdam (1973) described four possible ways that a corporation may choose to respond to social pressure: fight all the way, do only what is required, be progressive and lead the industry. David & Blomstrom (1975) describe alternative responses as follows: withdrawal, public relations approach, bargaining and problem solving.

In early 2003, the U.S. Environmental Protection Agency (EPA) charged Wal-Mart for improper dumping of hazardous waste in California and Missouri. Wal-Mart workers were found to throw products like bleach and fertilizer, into trash or to the local sewer system. Wal-Mart's first reaction was defensive- they claimed that the incident on which charges were based involved transportation & disposal of common consumer goods. Wal-Mart later responded by installing employees training program in 2006 and paid \$82 million in fines in May 2013 (Clifford 2013)The New York Times 2013). Hence the company moved along the CSR orientation dimension from reaction to defense to accommodation. However if Wal-Mart would have instituted the training program early on in the game, it would have saved it from negative public opinion and financial losses. Instead it chose to behave in a manner which indicates that Wal-Mart was unaware of the consequences of its own actions.

**H<sub>1a</sub>:** *CSR* orientation characterized by responsive behavior lead to better sustainability outcomes as compared to accommodative, reactive and defensive attitude towards sustainability issues.

Dowling and Pfeffer (1975) defined a legitimate firm if it is "just and worthy of support." Suchman (1975) noted that legitimacy is neither the abstract measure of rightness nor it is a characteristic of the firm but rather it is a measure of societal perceptions of the adequacy of corporate behavior. It is a measure of the attitude of society towards a corporation and its activities, and is a matter of degree from highly legitimate to highly illegitimate (Nasi et al. 1997).

Sethi (1975, 1979) outlined two primary sources of legitimacy gap: (1) change in social expectations or social contract that widens the gap between corporation's image and social expectations and (2) new information about the activities of the firm is suddenly revealed.

We earlier discussed Wal-Mart hazardous material dumping case. The same action of Wal-Mart might have not been considered socially unacceptable a decade ago. This may be due to lack of awareness of environmental issues, absence of regulatory framework to pin down culprits in such instances and most importantly, the social contract did not consider businesses responsible for such actions. However with the passage of time and accompanying developments, the social contract underwent change which could not be appreciated and accounted for in Wal-Mart's operations.

The Enron scandal revealed in 2001 is an example of the second source of legitimacy gap- the sudden revelation of new information. Enron's top executives concealed billions of dollars in debt from failed deals and projects from stakeholders. As a result Enron had to file for

bankruptcy under Chapter 11. Employees and shareholders lost nearly \$11 billion dollars due to failure of Enron on the stock market.

Similarly, the market structure and corporate practices of Archer Daniels Midland (ADM) lead to one of the largest price-fixing/cartel collusion activities in recent times. ADM was able to overcharge the North American buyers of lysine (an additive used in animal feed) and citric acid by \$250 million. As a result they ended up paying five times that amount in public penalties, private damages, and legal costs.

**H<sub>1b</sub>:** A socially responsive firm reduces the risk of illegitimacy arising from its operations, business policies & change in external environment.

<u>Environmental Scanning</u>: Environmental scanning for CSR purposes is defined as the process of gathering information needed to analyze firm's external environment (i.e. ethical, social and political) for the purpose of setting CSR objectives & formulating CSR strategy. The objective of environmental scanning is to inform decision-makers to potentially significant external changes before they actually take place. This provides sufficient lead time to the decision-makers for sound response. Fahey and Narayanan (1986) identify three levels of environmental scanning:

(1) Task environment: Stakeholders related to the firm

(2) Industry Environment: All enterprises associated with the firm

(3) Macro Environment: Social, technological, economic, environmental, and political (STEEP) sectors

One of the three key factors that KLD index base their rating upon for firms' sustainability performance is its ability to recognize key ESG (Environmental, Social &

Governance) risks and opportunities in the industry it operates. Campbell Soup Company conducts a formal strategic planning process for its 7 core business strategies which also includes advancing commitment to sustainability and CSR. The strategic planning process begins with a broad situation assessment during which they examine key internal and external drivers of their sustainability strategy, including key trends in the area of sustainability and the evolving expectations of their stakeholders with respect to corporate citizenship (Campbell Soup Company 2011).

**H<sub>2</sub>:** *Firms with good environmental scanning mechanism would have the knowledge they need to be more responsive to changing conditions & demands, and so would be able to adapt and survive in a dynamic and turbulent environment.* 

Engagement with multi-stakeholder groups: Theory of stakeholder management (Freeman 1984) suggests the idea that investing time and other resources in addressing stakeholders' interest is a justifiable managerial activity. This view of value optimization for the firm through inclusiveness is quite contrary to profit maximization criterion of Friedman (1962). However many industries including pharmaceuticals, oil and gas, and agrifood in the recent past have experienced increasing pressure from their stakeholders to act responsibly and engage in stakeholder dialogues (Riordan & Fairbrass 2008).

In the agri-food sector, multi-stakeholder sustainability alliances (MSSAs) have grown in importance as they allow companies to interact effectively with much broader set of stakeholders, restricted not only to supply chain partners & investors, but also governments, NGOs, and other civil society organizations. Some of the most recognized MSSAs are Sustainability Agriculture Initiative, International Cocoa Initiative, Round Table on Sustainable Palm Oil, Community Water Partnerships etc. Agrifood MNCs participating in these stakeholder lead initiatives include ADM, General Mills, Nestle, Kellogg Company etc.

Dentoni and Peterson (2011) studied that why MNCs are forming and participating in MSSAs as a significant part of their CSR strategy. Freeman (1984) broadly defines stakeholders as "any group or individual who can affect or is affected by the achievement of the organization's objectives". However this definition is too broad to afford any strategic direction for managers because practically everybody in the society has to be considered as a stakeholder in that case. Nasi (1995) narrows down the definition of stakeholders to include those actors who are critical to firm's survival. The MSSAs conform to this criterion of stakeholder driven sustainability strategy. Dentoni and Peterson (2011) argued that MSSAs can play critical role in firm's ability to credibly signal to other economic, social and environmental actors that it is committed to and engaged in sustainability practices. Questions on credibility of sustainability programs have been raised because of complexity and uncertainty about what constitutes sustainable behavior as opposed to green washing and performance.

**H<sub>3</sub>:** Firm's ability to send credible signals that it is successfully engaged in sustainability practices is positively associated with the completeness of composition of its multi-stakeholder alliance(s) which comprises of knowledge institutions, entrepreneurs, NGOs & governments.

### CSR Initiatives

Following the work of Elkington (1997), CSR initiatives are broadly classified along three dimensions: (1) Environmental initiatives, (2) Economic initiatives and (3) Social initiatives. In the Wood's (1991) model, CSR initiative is a subset of CSR performance. Whereas in the proposed CSP framework here, CSR initiatives has been separated out of CSR performance. It is

essential to make distinction between CSR performance and CSR initiatives and also between CSR processes and CSR initiatives, in order to investigate the relationship of CSR initiatives with CSR performance and CSR processes. The underlying assumption is that appropriateness of portfolio of CSR initiatives/projects is a key factor in determining the quality and extent of CSR performance.

According to the survey conducted by MIT Sloan Management Review (Berns et al. 2009), there is a consensus in the business community over the issues of potential business impact of CSR initiatives and projects. However the study found that most companies lack an overall plan for implementing corporate sustainability strategy (CSS) and delivering results (i.e. CSR performance). Many of their CSR initiatives seemed defensive and tactical in nature, consisting of a variety of '*disconnected initiatives*' focused on products, facilities, employees, and the greater community. For instance many companies are redesigning their products and business processes to have a lighter environmental footprint because it "makes a good business sense". Therefore it appears that company managers lack knowledge about comprehensive set of issues and drivers of sustainability that are relevant to their company and industry.

Dow Jones Sustainability Index and MSCI assess company's CSR initiatives on the basis of industry specific issues. In addition to sector specific key social issues, MSCI also accommodates company specific key issues when a company operates in a number of different business segments, or the company faces unique risks in a particular market. In these cases, the company is analyzed on that key issue.

Identification of company and industry specific CSR issues should be based on materiality assessment. Each CSR issue is assessed in relation to its impact on firms' stakeholders and its own compliance with policies and commitments. GRI 3.0 (2012) states that:

"Sustainability impacts create both opportunities and risks for an organization. The ability of an organization to recognize opportunities and risks, and act effectively in relation to them, will determine whether the organization creates and preserves or erodes value."

Therefore organizations are recommended to develop their CSR initiatives and programs around those CSR issues that are highly likely to contribute to the risk-opportunity portfolio of the firm. The extent to which they can do so will determine the effectiveness of their CSR initiatives in terms of creating value for themselves and for the society.

A good example of the adoption and implementation of a CSR initiative which is based on materiality assessment of the company specific CSR issue is Nestle's Sustainable cocoa initiative launched in 2009 (Bonini & Gorner 2011). Nestle faced potential cocoa supply constraints to which they responded by coordinating activities to promote sustainable cocoa. The cocoa initiative included production of 12 million highly productive cocoa plants over ten years, training of local farmers in efficient and sustainable methods and purchasing beans from farms that used sustainable practices. Similarly, mining firm BHP Billiton manages its exposure to proposed regulations by systematically reducing its emissions. The MIT Sloan management survey (Berns et al. 2009) observed that:

"Companies can do more to connect their stated intent in sustainability with business impact- and they can do it in a way that maintains explicit links to their bottom line over both the short and long term."  $H_{4a}$ : Environmental initiatives that are designed and implemented on the basis of industry and company specific CSR issues and its materiality assessment are more likely to create shared value (materiality effects) than the disconnected CSR initiatives that at best, can lead to incremental changes in businesses.

 $H_{4b}$ : Economic initiatives that are designed and implemented on the basis of industry and company specific CSR issues and its materiality assessment are more likely to create shared value (materiality effects) than the disconnected CSR initiatives that at best, can lead to incremental changes in businesses.

 $H_{4c}$ : Social initiatives that are designed and implemented on the basis of industry and company specific CSR issues and its materiality assessment are more likely to create significant shared value (materiality effects) than the disconnected CSR initiatives that at best, can lead to incremental changes in businesses.

### Corporate Sustainability Performance (CSP)

Several empirical studies in the previous five decades have investigated the relationship between CSP and CFP (Ziegler & Schroder 2010; Sonnenberg & Hamann 2006; Lee et al. 2011; Waddock 1997). Several variables have been used to proxy for CSP. A partial list includes emission reductions, environmental ratings, total organic carbon, Domini 400 social index, etc. Multitude of financial and accounting variables have been used to indicate CFP. These are ROE, ROA, ROS, earnings per share, accounting profits, ROCE, etc. Mostly studies have reported positive long term impact of CSP on CFP. However much of the variance in these studies is attributed to firm level differences. Therefore better understanding of these differences would

help company managers to understand in what ways they should try to improve CSP so that it has a positive impact on the CFP. In fact large variability in CSP-CFP relationships at the firm level suggests the necessity of identifying several moderators, for example: measurement strategies, industry growth, R&D intensity, etc.

As discussed earlier, most studies investigate CSP-CFP relationship under the assumption that sustainability projects compete for organization resources and managerial focus. Whereas the CSP-CFP relationship that is being proposed here is based on Porter's (2006) work on shared value creation.

The notion of shared value creation proposes that if companies were to identify sustainability issues that are closely tied in to their business, then there is a greater opportunity to leverage the firm's resources and also benefit the society. By investing in context specific sustainability issues, a symbiotic relationship develops: the success of the company and the society becomes mutually reinforcing.

### H<sub>5</sub>: CSP results in positive CFP

**H<sub>6</sub>:** *CSP* has a positive effect on natural and physical environment and social systems and institutions, that is, enhanced sustainability related outcomes

Relationship among CSR processes, CSR initiatives, and CSP

Relationship among CSR processes, CSR initiatives, and CSP is summarized in propositions 7, 8, and 9. The underlying hypothesis is that those companies that are able to align CSR process and CSR initiatives are more likely to generate a higher level of positive CSP. In comparison to that companies that fail to do so do not generate optimal levels of CSP. Such companies at best

are able to identify industry specific but not firm specific sustainability issues and in worst case scenario they hear only the big voices of peer companies, NGOs and other civil society organizations and fail to realize the sustainability context.

**H7:** Companies that adopt CSR processes to identify company specific sustainability issues are more likely to generate higher CSP than companies who choose processes to determine industry trends.

**H<sub>8</sub>:** Companies that identify and implement CSR initiatives specific to their sustainability context are more likely to generate higher CSP than companies who have a generalized approach towards CSR initiatives in order to comply with industry-wide acceptable norms.

**H9:** Companies that can coordinate their CSR processes and CSR initiatives are more likely to generate a larger positive effect on the corporate sustainability performance as compared to companies who fail to identify such linkages.

### **Conclusions and Discussion**

In this paper, a synthesis of the theoretical CSR models presented in the management literature and Corporate Sustainability Assessment Methodologies led to proposal of a conceptual model of CSP with three structural variables (CSR initiatives, CSR processes and CSP). This model presents several important research propositions to explain the nomological framework of the CSP conceptual model. The collection of hypothesis should be empirically tested in the future research and essay three takes an explorative step towards accomplishing this task.

Of notable absence from the theoretical literature, however, and thus also absent from the conceptual model, is a discussion of the role of firm strategy on CSP. This is an interesting finding given the rich history of the corporate strategy field and its emphasis on the strategy-performance relationship. Furthermore, recent industry developments have begun to stress on formulating *'strategies'* that can be implemented to manage sustainability risks or to exploit opportunities in a manner that is consistent with their business models. Results from the 2013 BCG-MIT Sloan survey of 5,300 executives indicate that 90% of companies that perceive sustainability issues as significant and thoroughly address them have developed a sustainability strategy. It, therefore, appears that there is one key missing element in the theoretical literature is the role of Corporate Sustainability Strategy (CSS). A formal CSS allows the companies to identify sustainability issues and concerns that are relevant to the firm.

A pertinent question, if we suggest CSS has a role in a firm's CSP, is: How does CSS fit into the proposed CSP conceptual model? The management literature may provide a way forward. Mintzberg (1987) claims that some organizations implement strategies before clearly articulating mission, goals, or objectives. In this case strategy implementation precedes strategy formulation. Mintzberg (1987) calls such strategies- emergent strategies. Another class of strategies that has been proposed by Porter (1980) are deliberate or intended strategies. Deliberate strategies are carefully planned and controlled by the organization. These strategies provide a coherent model for all business units and ensure that all those involved in strategic planning and its implementation are following common goals (Porter 1980).

Figure 14: Strategy Making: Design or Process?



Adapted from Mintzberg, H. (1987). Crafting strategy. Harvard Business Review

Similar to the general class of strategies, the CSS can be viewed as emergent or deliberate (see figure 15). Unfortunately the review of theoretical models of CSR and CSP did not provide any understanding on this issue.

To acknowledge the potential of CSS in a model of CSP, figure 15 modifies the earlier CSP model to include CSS as a construct that is linked to other structural variables in the CSP model. What remains unclear from the theoretical models, however is the relationship between CSS and the structure of the CSP model. In particular, following Chandler (1969), does firm's CSS lead to the structure of the CSP model or does the structure of the CSP model determine the CSS of the firm? To capture this unanswered question, a question mark (?) has been placed between CSS and the two structural variables in figure 15. The design of a firm's CSS has important implications for researchers and business managers. For example, the formulation of a firm's CSS, whether it's intended or emergent, is likely to have significant implications for how firms create value from their CSSs and their ability to capture that value.



Figure 15: Conceptual Model of Corporate Sustainability Performance and CSS

The difference between emergent vs. intended strategy formulation can be illustrated with respect to a firm's CSR processes. The CSP conceptual model indicates that CSR processes are comprised of environmental scanning, MSG engagement and CSR orientation. If companies, for instance, use uncoordinated, random environmental scans to choose CSR initiatives (or actions), then according to Mintzberg (1987), CSS may be said to be emergent. That is, decision makers and chosen initiatives respond to external and internal forces. The alternative is that CSR processes are pursued on an ongoing manner to support planning and rational choice are would be the case if CSS was intended in nature. Further work should explore the nature of CSS and its implications for CSP.
REFERENCES

#### REREFENCES

Ackerman, R.W., and Bauer, R.A. 1976. Corporate Social Responsiveness. VA: Reston: Reston.

Baumgartner, Rupert J., and Daniela Ebner. 2010. "Corporate Sustainability Strategies: Sustainability Profiles and Maturity Levels." *Sustainable Development* 18 (2): 76–89. doi:10.1002/sd.447.

Bollen, Kenneth A. 1989. Structural Equations with Latent Variables. John Wiley & Sons.

Boulding, K.E. 1956. "General Systems Theory: The Skeleton of Science." *Management Science* 2: 197–208.

Bowen, H.R. 1953. Social Responsibilities of the Businessman. New York: Harper.

Buchholz, R.A. 1977. "An Alternative to Social Responsibility." *MSU Business Topics* 25 (3): 12–16.

——. 1982. Business Environment and Public Policy. Englewood Cliffs, NJ: Prentice-Hall.

Carroll, Archie B. 1979. "A Three-Dimensional Conceptual Model of Corporate Performance." *Academy of Management Review* 4 (4): 497–505.

———. 1999. "Corporate Social Responsibility: Evolution of a Definitional Construct." *Business & Society* 38: 268.

———. 2000. "A Commentary and an Overview of Key Questions on Corporate Social Performance Measurement." *Business & Society* 39 (4).

Cochran, P.L., and R.A. Wood. 1984. "Corporate Social Responsibility and Financial Performance." *Academy of Management Journal* 27: 42–56.

Committee for Economic Development. 1971. *Social Responsibilities of Business Corporations*. New York: Committee for Economic Development.

Cruz, J.M., and T. Wakolbinger. 2008. "Multiperiod Effects of Corporate Social Responsibility on Supply Chain Networks, Transactions Costs, Emissions, and Risk." *International Journal of Production Economics* 116 (1): 61–74.

Davis, K. 1960. "Can Business Afford to Ignore Social Responsibilities?" *California Management Review* 2: 70–76.

Davis, K., and R.L. Blomstrom. 1975. *Business and Society: Environment and Responsibility( 3rd Ed.)*. New York: McGraw-Hill.

Dentoni, D., and H. Christopher Peterson. 2011. "Multi-Stakeholder Sustainability Alliances in Agri-Food Chains: A Framework for Multi-Disciplinary Research." *International Food and Agribusiness Management Review* 14 (5).

Detre, Joshua D., and Micheal A. Gunderson. 2011. "The Triple Bottom Line: What Is the Impact on the Return to Agribusiness?" *International Food and Agribusiness Management Review* 14 (4).

Donaldson, T. 1982. Corporations and Morality. Englewood Cliffs, NJ: Prentice-Hall.

Dowling, James, and Jeffrey Pfeffer. 1975. "Oranizational Legitimacy: Social Value and Organizational Behavior." *Pacific Sociological Review* 18: 122–138.

Fahey, L., & Narayanan, V. K. (1986). *Macroenvironmental Analysis for Strategic Management* (*The West Series in Strategic Management*). St. Paul, Minnesota: West Publishing Company

Fayol, H. 1967. General and Industrial Management. London: Pitman.

Fogler, H.R., and F. Nutt. 1975. "A Note on Social Responsibility and Stock Valuation." *Academy of Management Journal* 18: 155–160.

Frederick, William C. 1994. "From CSR1 to CSR2." Business and Society 33 (2) (August): 150.

Freeman, R.E. 1984. *Strategic Management: A Stakeholder Approach*. Massachusetts: Pitman Publishing Inc.

Freeman, R.E, and J. Liedtka. 1991. "Corporate Social Responsibility: A Critical Apprach." *Business Horizons* 34 (4): 92–98.

Friedman, M. 1962. Capitalism and Freedom. Chicago, IL: University of Chicago Press.

Haas, P.F. 1979. "The Conflict Between Private and Social Responsibility." *Akron Business and Economic Review* 10 (2): 33–36.

Heyne, P.T. 1968. Private Keepers of the Public Interest. New York: McGraw-Hill.

Kang, Y.C. 1995. "Before-profit Corporate Social Responsibility and Stakeholder Management Systems". PhD Dissertation, University of Pittsburgh.

Lee, Jooh, N. Pati, and J.J. Roh. 2011. "Relationship Between Corporate Sustainability Performance and Tangible Business Performance: Evidence from Oil and Gas Industry." *International Journal of Business Insights & Transformation* 3 (3).

Linda O' Riordan, L., and J. Fairbrass. 2008. "Corporate Social Responsibility (CSR) Models and Theories in Stakeholder Dialogue." In Queen's University, Belfast.

Lo, Shih-Fang, and Her-Jiun Sheu. 2007. "Is Corporate Sustainability a Value-Increasing Strategy for Business?" *Corporate Governance: An International Review* 15 (2): 345–358.

McAdam, T.W. 1973. "How to Put Corporate Responsibility into Practice." *Business and Society Review/Innovation* 6: 8–16.

McGuire, J.W. 1963. Business and Society. New York: McGraw-Hill.

McGuire, Joseph W. 1969. "The Changing Nature of Business Responsibilities." *Journal of Risk & Insurance* 36 (1) (March): 55–61. bth.

Minzberg, H. 1987. "The strategy concept I: five Ps for strategy." *Californai Management Review* 30 (1): 11-24

MSCI. 2012. "Intangible Value Assessment (IVA) Methodology."

Murphy, P.E. 1978. "An Evolution: Corporate Social Responsiveness." *University of Michigan Business Review* 6 (30): 19–25.

Nasi, J. 1995. What is stakeholder thinking? A snapshot of a social theory of the firm. In *Understanding stakeholder thinking* edited by Nasi, J., 19-32. Helsinki, Finland: LSR Publications.

Nasi, Juha, Salme Nasi, Nelson Phillips, and Stelios Zyglidopoulos. 1997. "The evolution of corporate social responsiveness." *Business and Society* 36 (3) (September): 296–321.

Ozar, D. 1979. The Moral Responsibility of Corporations. In T. Donaldson & P. Werhane (Eds.), Ethical Issues in Business (1st Ed., Pp. 294-300). Englewood Cliffs, NJ: Prentice-Hall.

Poetz, K., R. Haas, and M. Balzarova. 2012. "Emerging Strategic Corporat Social Responsibility Partnership Initiatives in Agribusiness: The Case of the Sustainable Agriculture Initiative." *Journal on Chain and Network Science* 12 (2): 151–165.

Porter, M.E. 1980. *Competitive strategy: Techniques for analyzing industries and competitors*. Free Press, New York.

Porter M.E., and M.R. Kramer. 2006. "Strategy and Society: The Link Between Competitive Advantage and Corporate Social Responsibility." Harvard Business Review 84 (12): 78-92.

Preston, L.E., and J.E. Post. 1975. *Private Management and Public Policy*. Englewood Cliffs, NJ: Prentice-Hall.

——. 1981. "Private Management and Public Policy." *California Management Review* 23 (3): 56–62.

Saes, M.S., C.M. Souza, and M.N. Otani. 2003. "Strategic Alliances and Sustainable Coffee Production: The Shaded System of Baturite, State of Ceara." *International Food and Agribusiness Management Review* 6 (2).

Sethi, S. Prakash. 1975. "Dimensions of Corporate Social Performance: An Analytical Framework." *California Management Review* 17 (3): 58–64. bth.

——. 1979. "A Conceptual Framework for Environmental Analysis of Social Issues and Evaluation of Business Response Patterns." *Academy of Management Review* 4 (1) (January): 63–74. bth.

Sonnenberg, Dan, and Ralph Hamann. 2006. "The JSE Socially Responsible Investment Index and the State of Sustainability Reporting in South Africa." *Development Southern Africa* 23 (2).

Strand, Rich. 1983. "A Systems Paradigm of Organizational Adaptations to the Social Environment." Ed. Read: 05/07/2006 and Anonymous. *The Academy of Management Review* 8 (1): 90.

Suchman, Mark C. 1995. "Managing Legitimacy: Startegic and Institutional Approaches." *Academy of Management Review* 20 (3): 571–610.

Swanson, Diane L. 1995. "Addressing a Theoretical Problem by Reorienting the Corporate Social Performance Model." *Academy of Management Review* 20 (1) (January): 43–64. bth.

———. 1999. "Toward an Integrative Theory of Business and Society: A Research Strategy for Corporate Social Performance." *Academy of Management Review* 24 (3): 506–521. bth.

Taylor, F.W. 1911. The Principles of Scientific Management. New York: Harper.

Thompson, J.D. 1967. *Organizations in Action: Social Science Bases of Administrative Theory*. New York: McGraw-Hill.

Ullmann, A.A. 1985. "Data in Search of a Theory: a Critical Examination of the Relationships Among Social Performance, Social Disclosure, and Economic Performance of U.S. Firms." *Academy of Management Review* 10: 540–557.

Waddock, Sandra A., and Samuel A. Graves. 1997. "The Corporate Social Performance-Financial Performance Link." *Strategic Management Journal* 18 (4): 303–319.

Walters, K.D. 1979. "Corporate Social Responsibility and Political Ideology." *California Management Review* 4: 359–368.

Wartick, Steven L., and Philip L. Cochran. 1985. "The Evolution of the Corporate Social Performance Model." *Academy of Management Review* 10 (4) (October): 758–769. bth.

Weber, M. 1948. The Protestant Ethic and the Spirit of Capitalism. New York: Scribner.

Wilson, Ian. 1975. "What One Company Is Doing About Today's Demands on Business." In *Changing Businesssociety Interrelationship*, ed. George A. Steiner. Los Angeles: Graduate School of Management, UCLA.

Wood, Donna J. 1991. "Corporate Social Performance Revisited." *Academy of Management Review* 16 (4) (October): 691–718. bth.

------. 1994. Business and Society. 2nd ed. New York: HarperCollins.

——. 2000. "The Not-ready-for-prime-time Scholars: Theory, Research, Passion and Integrity in Business & Society." In *First Annual Conversazione on Business, Issue and Society*. University of Northern Iowa, Cedar Falls.

———. 2010. "Measuring Corporate Social Performance: A Review." *International Journal of Management Reviews* 12 (1): 50–84. doi:10.1111/j.1468-2370.2009.00274.x.

Zenisek, T.J. 1979. "Corporate Social Responsibility: A Conceptualization Based on Organizational Literature." *Academy of Management Review* 4: 359–396.

Ziegler, Andreas, and Michael Schroder. 2010. "What Determines the Inclusion in a Sustainability Stock Index? A Panel Data Analysis for European Firms." *Ecological Economics* 69: 848–856.

#### CHAPTER 3

## A THEMTATIC NETWORK ANALYSIS OF PERCEIVED CRITICAL ATTRIBUTES OF CORPORATE SUSTAINABILITY STRATEGY FOR GLOBAL AGRI-FOOD COMPANIES

#### Abstract

This article seeks to identify critical attributes and attribute components of corporate sustainability strategy for global agri-food companies. Semi-structured interviews with 16 sustainability experts from three groups of stakeholders: agri-food businesses, NGOs, and knowledge institutions were conducted. Results from interviews indicate that the five most critical attributes for leading and minimally effective sustainable agri-food companies are: (1) Processes to identify sustainability issues, (2) Engagement with MSGs, (3) Resource commitment to sustainability, (4) Integration of sustainability with traditional management systems, and (5) Measurement of sustainability outcomes. The thematic network analysis of qualitative data pertinent to leading corporate sustainability strategy revealed four global themes around which 16 organizing themes and 52 basic themes were found to be clustered. The four global themes are (1) Sustainability strategy is integral to corporate strategy, (2) Materiality considerations guide CSS, (3) Corporate Sustainability is multi-dimensional, and (4) Focus of CSS is both on internal and external aspects.

#### Introduction

The global agri-food industry is facing challenges arising from diverse expectations from a variety of internal and external stakeholders. On one hand the agri-food industry is expected to provide access to safe, nutritious and high quality food, and on the other hand it has to facilitate farmers to produce 70% more food to feed at least 9 billion people by 2050 (Tomlinson 2011), promote responsible agricultural practices, reduce environmental impacts such as greenhouse gas emissions, socially acceptable labor practices and strengthen farming communities along the value chain (SARE 2013). According to Rabobank (2011), a leading bank in the food and agribusiness industry:

"While the next decade will be dominated by a battle for agri-commodity supply, we conclude that it is only the beginning of a profound transition in the global food and agriculture sector. In the next 40 to 50 years, the F&A sector will need to double agri-commodity supply with access to only about half of the current land, water and mineral resources. Delivering this four-fold improvement in output is the over-riding challenge facing the incoming generation of food & agriculture leaders."

Extant literature has analyzed the conflict between the agribusiness sector and the society at large. Both upstream and downstream sectors of the agri-food supply chain have been brought under tough scrutiny and criticism by critical stakeholder groups such as nongovernmental organizations (NGOs), consumer groups and knowledge institutions, who have become increasingly significant as watchdogs of business operations and its impact on the society (Clapp & Fuchs 2009; Gerlach 2006; Heyder & Theuvsen 2012). These include concerns over animal welfare and size of livestock operations (Geers & Madec 2006; Gerlach 2006; Heyder & Theuvsen 2008; Jansen & Vellema 2004), systematic environmental contamination by pesticides

and fertilizers companies (Gordon 1999; Jansen & Vellema 2004) and use of genetic engineering by seed companies and GMOs (Pellegrini 2009).

The food and beverages industry is facing similar criticism from various consumer groups and NGOs concerning health effects (James et al. 2004; Vartanian et al. 2007), environmental issues such water usage and recycling (Brownell & Frieden 2009), questionable marketing practices (Montgomery & Chester 2009; Wilde 2009), obesity (Chopra & Darton-Hill 2004; Hawkes 2006), and alcohol abuse (Bond et al. 2009; Guthrie, Cuganesan & Ward 2008). In addition, dishonest practices such as corruption, price-fixing (Walsh 2007), monopolistic practices (Burch & Lawrence 2007; Hingley 2005), poor corporate governance (Clapp & Fuchs 2009; Palpacuer 2006) and bad working conditions (Albersmeier & Spiller 2010) has depleted consumer trust in companies associated with the agri-food sector. Negative consumer and critical societal groups' perceptions about conditions of agricultural practices, food production and food retailing can lead to legitimacy problems (Jansen & Vellema 2004; Thompson 1967).

Several scholars have proposed that corporate social responsibility (CSR) practices can establish legitimacy of business operations (Heyder & Theuvsen 2008; Kuo & Chen 2013; Muller et al. 2009). In addition to that benefits from CSR initiatives range from cost-savings, risk management, compliance with regulatory standards, strengthening of supply chains, efficiency, streamlining and shared value creation (Kissinger 2012). Global agri-food companies are investing significant resources in instituting and tracking the progress of their corporate sustainability (CS) programs. Apart from individual company specific initiatives, several industry level organizations and consortiums are also working to accelerate the shift towards sustainability. For instance, Sustainable Food Lab, a consortium of business, non-profit and public organizations is geared towards market-based solutions to sustainability issues related to all 3P (People, Profit and Planet) aspects of sustainability such as soil, climate, water (Planet), poverty (People), and nutrition (Profit).

The Sustainable Agriculture Initiative (SAI) Platform currently consists of 50 members, mostly global agri-food companies. It promotes involvement of food chain participants to play active role in the development of sustainable practices for mainstream agriculture. One of their main activities is to gather and develop knowledge on sustainable agriculture, which it shares with all interested parties to reach common understanding of the concept of sustainable agricultural practices and of its long-term implications (SAI 2013). They are working towards negotiating a common set of sustainable agricultural practices at the farm level. This will facilitate scaling up of sustainability standards along the value chain as all SAI member companies would use these standards in their supplier agreements. Similarly the Global Social Compliance Program (GSCP) consists of companies from several industries and includes agrifood firms like Wal-Mart, Unilever, Carrefour, Chiquita, Dole, Starbucks etc. These global retailers and brand manufacturers have got together and have created a reference tool for suppliers in relation to social and labor management systems. This tool can be used by companies to benchmark their own processes and to send signals to the market about their sustainability commitments and performance.

#### **Research Question**

Many agri-food companies have responded to these multi-faceted challenges by actually going beyond CSR practices and incorporated corporate sustainability programs as an integral part of their corporate strategy (Rankin et al 2011; Hoffman 2000; Toppinen & Korhonen-Kurki 2013; Zwetsloot 2003). However, the development of a Corporate Sustainability Strategy (CSS) is an emerging business function that integrates social and environmental concerns into business operations and into their interaction with their stakeholders voluntarily (Toppinen & Korhonen-Kurki 2013; Zwetsloot 2003). Unlike other corporate activities such as marketing, sales, corporate communication, human resource management, and finance, critical attributes of CSS are not well defined. Studies indicate that managerial principles that guide CSS go far beyond the present generation of total quality management systems. (Zwetsloot 2003).

Several studies in the management literature have been done to analyze: (1) one of the 3Ps of sustainability strategy in relation to a single stakeholder group, for instance the impact of environmental disclosure strategy on firms' legitimacy (Kuo & Chen 2013); role of internal stakeholders such as employees in implementation of proactive environmental strategies (Aragon et al. 2013; McEvily & Marcus 2005; Ramus & Steger 2000; Russo & Fouts 1997; Winn & Angell 2000), (2) one of the 3Ps in relation to multiple stakeholder groups (Abreu 2011; Marti and Seifert 2013; Vachon & Klasen 2006), (3) all 3Ps in relation to a single stakeholder group, for instance equity holders (Detre & Gunderson 2011; Oberndorfer et al. 2013).

On the other hand, few studies have attempted to analyze all the 3Ps of corporate sustainability in relation to multiple stakeholder groups simultaneously such as NGOs,

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knowledge institutions, supply chain partners etc. The complexity of formulating corporate sustainability strategy in such a setting would increase significantly because of the fact that stakeholder groups not only influence firms' CSS individually but they also have a combined effect through mutual interactions on multi-stakeholder platforms (Lin 2012). Study on this issue appears to be especially lacking in the agri-food and agribusiness literature. This study aims to fill this gap by identifying the critical attributes of CSS for an agri-food firm and to identify the levels of those attributes in *leading and minimal* sustainability strategies. Opinions of three major stakeholders groups of sustainable agri-food systems (i.e. agri-food companies, NGOs and knowledge institutions) would be examined towards this end.

Some studies that have incorporated multi-dimensional aspects of sustainability in relation to a single stakeholder group have used ready-made aggregate index-based scores of sustainability performance such as KLD score, DJSI membership, Fortune 500 rankings, etc. (Detre & Gunderson 2011; Oberndorfer et al. 2013). The major downside with this approach stems from the inability to perform firm or industry specific analyses. CSS is dependent on core business functions of an agri-food company otherwise sustainability programs would lack direction and ability to create shared value. Sustainability rating agencies employ the same yardstick to judge the effectiveness of sustainability efforts and performance for firms across several industries. But what may be a highly critical sustainability issue for financial services industry may not be important for the agri-food industry and vice-versa. Therefore CSS must be specific to societal and environmental issues that the company and the industry at large, is facing (Ross, Pandey & Ross 2102).

The unit of analysis in the extant literature for analyzing the formulation and impact of corporate sustainability strategies on performance is an agri-food company or a group of companies. The sustainability strategies of companies have been broadly classified into two:

(1) Leading strategies are formulated by agri-food companies that have committed themselves to sustainability ideals in a significant way. In this study we refer them as leading companies and their strategy as leading strategy, and (2) "Greenwashing" approach refers to corporate posturing, token efforts and deception in absence of external monitoring & verification so as to maximize perceptions of legitimacy (Bruno 1997; Deegan 2002; Laufer 2003; Owen & Swift 2001).

However, there is an emerging class of sustainability strategies that are being increasingly recognized by critical stakeholder groups like NGOs, regulators, and knowledge institutions but has not been studied in the literature till now. These are called Minimal Sustainable Strategies and companies which that formulate and implement minimal strategies are called Minimally Effective Sustainable Agri-Food companies. It is posited that minimal strategy is implemented by companies that are usually in the initial phase of transition from their current reality to sustainability space and they are pursuing CSS beyond green washing activities, that is, they have a genuine interest in sustainability but at the same time they have not committed to creating value through sustainability efforts as some of the leading firms are trying to do. Results from this study aims to bring out some more specific features of minimal strategy and how it differs from leading strategy.

As already discussed, CSS is an emerging concept; and therefore an exploratory approach is suitable for carrying out the fundamental work in this field. Furthermore, although the concept of CSS has been recently introduced in the literature and practice, an understanding of the key

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constructs and concepts that are to be used to define CSS have not been articulated. This study, therefore, addresses the following two primary research questions: (1) What are the key constructs and attributes that define CSS?, and (2) How do we distinguish leading CSS from minimal CSS? Addressing these questions is essential to establish a structural model of CSS, which can be empirically tested in future research.

#### **Research Methodology**

#### Semi-Structured Interview Protocol

Given the exploratory nature of the study, qualitative research methodologies were used to address the research questions posed in the study. A semi-structured interview protocol has been used for data collection to carry out the task of determining the critical attributes of CSS in this field study. According to Barriball & While (1994), there were two primary considerations for using semi-structured interviews. Firstly, they are well suited for the exploration of perceptions and opinions of respondents regarding complex and at times sensitive issues. The interviewer can probe for more information and clarification of response. Second, interviewees came from three distinct groups of sustainability expert: NGOs, knowledge institutions and agri-food companies. The scope of their response cannot be limited to fixed number of multiple choice responses. Therefore standardized interview schedule or structured interviews was not used.

Another reason for using semi-structured interview is the emerging nature of the field of corporate sustainability. For example terms such as stakeholders, sustainability initiatives, materiality, leading sustainability strategies, minimal sustainability strategies, and green washing may not carry same meaning for all respondents. Semi-structured interviews gave the opportunity to change words but not the meaning of questions (Nay-Brock 1984; Treece & Treece 1986) so that the data can reveal actual information. The freedom to probe all unclear or ambiguous words and concepts is essential (Treece & Treece 1986).

The semi-structured interview protocol, therefore not only gives the interviewer the opportunity to word each question differently, without changing the meaning, but also the ability

to ensure the reliability of the data (Hutchinson & Skodol-Wilson 1992). Probing allows for clarification of important issues raised by interviewees (Hutchinson & Skodol-Wilson 1992), explore sensitive information, elicit valuable and complete information (Austin 1981; Gorden 1975), clarify inconsistencies in responses and can help respondents recall information for questions involving memory (Smith 1992). According to Denizen (1989), validity and reliability in semi-structured interviews does not depend on the frequency of same words in each question, rather it depends on equivalence of meaning that helps to standardize semi-structured interview and allow comparability.

Interviews were sent to 35 sustainability experts. They were identified during academic and industry conferences and through personal contacts of members of the research team. The sustainability experts typically had reference to "Sustainability" in their job title and they had at least ten years of experience of working in this arena. Several experts also happen to lead sustainability related activities in their respective organizations. In total an interview was conducted with 16 of these 35 sustainability experts in the October and November months of 2013. Following their acceptance to participate in the interview, a semi-structured interview protocol was sent to the expert at least 24 hours prior to the interview. The interview protocol was prepared for two reasons: (1) to give opportunity to interview respondents to think about issues in advance and (2) several respondents were required to submit such documentation with their corporate communication team owing to the sensitive nature of discussion.

Respondents were clearly informed that they are being interviewed in recognition of their individual status as a recognized expert in the arena of corporate sustainability issues in the agrifood industry and not as direct representatives of their companies. It was the goal of this research to create an appropriate environment in which respondents did not feel the pressure to defend their company's practices and could freely discuss their opinions on what they consider to be critical elements of a CSS. Sustainability experts were not asked direct questions pertaining to activities of specific companies and organizations. In addition to that, respondents were given the choice to not answer any particular question or withdraw at any time without penalty. The anonymity of respondents was preserved by removing identifying information of respondents from transcriptions. Respondents were also promised that their responses would be kept private and confidential by not attributing any quote to a specific individual in the subsequent reporting and that the recordings would be permanently disposed after the transcription. Freeing the respondent from the responsibility to defend any particular firm strategy was critical to enhance the reliability and validity of study findings.

Corporate sustainability experts came from three general classes of stakeholders:

(1) Agri-food companies, referred as business experts

(2) NGOs, referred as NGO experts

(3) Knowledge Institutions, referred as KI experts

The three groups of experts included food manufacturers, beverage producers, food service producers, Not-for-Profit organizations, food retailers, researchers from social sciences and applied sciences, independent consultants, independent research organizations and NGOs. Interviews with sustainability experts was conducted over phone and recorded with their permission. Thereafter they were personally transcribed for data analysis. On average, interviews lasted approximately 45 minutes.

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The interview protocol consisted of nine attributes of CSS and questions pertaining to behavior of leading and minimal companies in relation to these attributes (see appendix 1). CSS attributes were identified based on existing literature, annual corporate social responsibility reports of agri-food companies, corporate assessment processes (i.e. DJSI and KLD). In the chapter two of this dissertation, an inventory of corporate sustainability initiatives and performance indicators has been prepared to identify broad strategic attributes of CS.

Several Corporate Sustainability Assessment Methodologies, CSR reports of agri-food companies, and codified industry standards such as ISO 26000 were used to identify prospective attributes of CSS. We looked for attributes that that were particularly emphasized and recurred several times in these publically available documents. Based on this procedure, nine attributes were identified that were included in the interview protocol: (1) Primary motivation for engaging in sustainability, (2) Processes through which sustainability issues are identified, (3) Engagement with multi-stakeholder groups focusing on agri-food sustainability, (4) Resource commitment level of top management to CSS, (5) Portfolio of sustainability initiatives and projects, (6) Integration of sustainability programs with traditional management systems, (7) Measurement of sustainability outcomes, (8) Communication of CSS programs, (9) Third party audit of CSS programs.

Respondents were requested to identify top five CSS attributes for agri-food firms that they consider to be critical for the success of corporate sustainability programs. The condition of choosing five out of nine attributes was implemented primarily to ensure that respondents prioritize their responses based on their experience of working in this arena. And secondly it was not possible to hold elaborate discussions on all the attributes within the stipulated time period of one hour. Experts had the option to not choose some or any of the attributes from the list given to

them and were free to recommend new critical attributes. Additional attributes that respondents contributed to the list are: (1) Human resource management and training programs on sustainability, (2) Extent of deployment of CSS along the value chain, (3) Economic viability of CSS programs, (4) Resolution of contradictions and trade-offs with value chain partners, (5) Scalability of pilot level CSS projects.

In qualitative research, data is not analyzed to indicate ordinal value (Nkwi et al. 2001). The data is non-numeric and less standardized than those generated in the quantitative domain. Therefore selection of appropriate technique is important and depends on the research objectives and data. Among the different types of formal qualitative analysis techniques available are: grounded theory, discourse analysis, narratives, case study, thematic analysis, ethnography, phenomenological analysis etc (Rapley 2011).

#### Thematic Network Analysis

Given that the purpose of this research work is to explore the understanding of key issues and elements of CSS, rather than to reconcile opposing viewpoints on the CSS, thematic analysis was used for data analysis based on recommendations provided by Attride-Stirling (2001). Thematic analysis provides the opportunity to unearth, analyze and report patterns (themes) within transcripts based data (Attride-Stirling 2001; Bischof et al. 2011). It minimally organizes and describes the data set in rich detail. However, frequently it goes further than this, and interprets various aspects of the research topic (Bischof et al. 2011; Braun & Clarke 2006).

Thematic networks are a simple way of organizing the thematic analysis of qualitative data (Attride-Stirling 2001). Thematic networks are web-like illustrations that summarize main themes in the qualitative data. Thematic networks, as an analytical tool, draw on core features

that are common to many approaches in qualitative data analysis (Attride-Stirling 2001) such as grounded theory, framework analysis and many other techniques. The difference is that these other analytic methods that seek to describe patterns across qualitative data are theoretically bounded.

Thematic analysis seeks to identify themes salient in a text at different levels. According to Braun and Clarke (2006), a theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set. The first step is to develop codes that represent identified themes and are linked to raw data as summary markers for further analysis. Attride-Stirling (2001) mentioned three levels at which themes are analyzed in the textual data: (1) basic themes, (2) organizing themes, and (3) global themes.

A basic theme, as the name suggests is the most basic or lowest order theme (Attride-Stirling 2001). They do not convey much about the text or a portion of text on their own. However a number of basic themes around the same issue can form a cluster which is known as an *Organizing Theme*. Organizing theme is a middle order theme that organizes basic themes. Organizing themes convey important imports and summarize principal assumptions for a group of basic themes (Attride-Stirling 2001). A group of organizing themes constitutes a *Global Theme*. A global theme presents an argument about a given issue. It is a macro theme that summarizes and makes sense of clusters of lower-order themes based on data. Thus global themes tell us what the texts as a whole are about within the context of a given analysis (Attride-Stirling 2001). Each global theme is the core of thematic network and therefore an analysis may result in more than one thematic network.

Attride-Stirling's study (2001) provides a detailed framework for systematically implementing thematic network analyses. The first step in a thematic network analysis is to reduce the qualitative data into manageable and meaningful text segments with the use of a coding framework. The coding framework is developed on the basis of theoretical concepts or constructs that motivate the research problem, on the basis of recurrent issues that arise in the text itself, or on the basis of both. I have used both the methods for coding the data. Attride-Stirling (2001) emphasize that codes in the coding framework should be distinguishable from each other to avoid code redundancy, and they should focus on the objective of analysis in order to avoid coding every single sentence.

The second step is the identification of salient themes. Text segments in each code (or group of associated codes) are analyzed to extract common or significant themes. This task is accomplished by re-reading the text segments within each code. This allows the researcher to reframe the text, which enables the identification of underlying patterns and structures.

Next step is to refine the identified themes. Selected themes are further refined into themes that are (1) specific enough to be discrete, and (2) broad enough to cover a set of ideas contained in the coded text segments.

Refinement of themes is followed by construction of networks. Themes derived from coded text are assembled into similar and coherent groupings. These groupings will become thematic networks. Grouping decisions are based on content and if applicable, theoretical considerations are also taken into account. Each grouping will result in a Global Theme, supported by Organizing and Basic Themes. Themes derived from coded text and that now assembled into groups are utilized as Basic Themes Basic Themes are arrived by simply re-

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naming the original set of themes. Clusters of basic themes focusing on larger but similar issues form Organizing Themes. In reference to Basic Themes, summarize the main claim, proposition, argument, assertion or assumption that the Organizing Themes are about. This claim is called the Global Theme of the thematic network.

Once the basic themes, organizing themes and global themes are prepared, one illustrates them as non-hierarchical, web-like representations. Thematic networks are created by working from basic themes (periphery), to the global theme (inwards). The main objective of thematic network analysis is to summarize particular themes in order to create larger, unifying themes that clusters and condenses experts the lower order concepts and ideas. Therefore each global theme will produce a separate thematic network. Formal steps in thematic network analysis are outlined in figure 16.

Computer-assisted qualitative data analysis software (CAQDAS) Atlas.ti (version 5) is used for data analysis. The main functionality of this program is 'code and retrieve', that is, once the text has been coded, searches are fast and comprehensive and complex searches using Boolean operators can be undertaken. This feature of assisting with the mechanical aspects of analysis gives freedom from very basic level data management so that the researcher can focus on the conceptual aspects (Seale 2000; Thompson 2002). In this research, CAQDAS was primarily used to code data and run queries for identification of themes and for designing networks.

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Figure 16: Steps in analyses employing thematic networks

ANALYSIS STAGE A: REDUCTION OR BREAKDOWN OF TEXT Step 1. Code Material (a) Devise a coding framework (b) Dissect text into text segments using the coding framework
Step 2. Identify Themes (a) Abstract themes from coded text segments (b) Refine themes
<ul> <li>Step 3. Construct Thematic Networks <ul> <li>(a) Arrange themes</li> <li>(b) Select Basic Themes</li> <li>(c) Rearrange into Organizing Themes</li> <li>(d) Deduce Global Theme(s)</li> <li>(e) Illustrate as thematic network(s)</li> <li>(f) Verify and refine the network(s)</li> </ul> </li> </ul>
ANALYSIS STAGE B: EXPLORATION OF TEXT Step 4. Describe and Explore Thematic Networks (a) Describe the network (b) Explore the network
Step 5. Summarize Thematic Networks
ANALYSIS STAGE C: INTEGRATION OF EXPLORATION Step 6. Interpret Patterns

Source: Attride-Stirling, J. "Thematic Networks: An Analytic Tool for Qualitative Research." *Qualitative Research* 1, no. 3 (2001): 385–405.

#### **Research Findings**

In the first part of the interview, experts were asked to choose their top five critical attributes of CSS. In table 17, group wise and overall rankings of all the CSS attributes is presented. Out of these nine attributes, we have chosen to focus our discussion on the top five attributes of CSS.

Overall (n=16)	Businesses (n=6)	NGOs (n=5)	Knowledge Institutions (n=5)
<ol> <li>MSG engagement (12)</li> <li>Measurement of CSS outcomes (12)</li> </ol>	Measurement of CSS outcomes (6)	Resource(5) Integration of CSS systems (5)	MSG Engagement(4)
3. Resource Commitments (11)	Motivation (4) MSG engagement (4) Resource Commitment (4) Portfolio of CS Initiatives(4)	MSG engagement(4)	Processes to identify CSS issues(3) Measurement of CSS outcomes(3)
4. Integration of CSS systems (9)	Communication of CSS programs (3)	Measurement of CSS outcomes(3) Third Party audits(3)	Resources Commitment(2) Integration of CSS systems(2) Third Party audits(2)
5. Processes to identify CS issues (7)	Processes (2) Integration of CSS systems (2)	Processes (2) Portfolio of CS Initiatives (2)	Motivation (1) Communication of CSS programs (1)
<ul><li>6. Portfolio of Initiatives</li><li>(6)</li><li>6. Primary Motivation (6)</li></ul>	Third party audits (0)	Motivation (1)	Portfolio of Initiatives (0)
8. Third Party audits (5)		Communication of CSS programs (0)	
9. Communication of CSS Programs (4)			

Table 17: Overall and Stakeholder level ranking of CSS Attributes

Based on responses, the following attributes in the descending order of importance were found to be most critical for the success of sustainability programs of agri-food companies.

(1) Engagement with multi-stakeholder groups focusing on agri-food sustainability

(2) Measurement of sustainability outcomes

- (3) Resource commitment level of top management to CSS
- (4) Integration of sustainability programs with traditional management systems
- (5) Processes through which sustainability issues are identified

In addition to the overall ranking of critical CSS attributes, table 18 also gives separate rankings of CSS attributes for three groups of sustainability experts. Engagement with multi-stakeholder groups (MSGs), resource commitment and measurement of CSS outcomes is among the top five attributes for all three expert groups. Integration of sustainability with traditional management and control systems and third party audits are critical attributes according to NGOs and Knowledge institutions. Other than the experts representing agri-food businesses, other groups of experts did not rank motivation for sustainability and portfolio of sustainability initiatives/projects in their list of top five attributes.

The second part of the interview dealt with the detailed discussion of the leading and minimal strategies in relation to the top five critical CSS attributes that each expert had identified during first phase of the interview. This is done to identify important components and provide a detailed explanation of the aspects that accompany critical attributes of sustainability strategy. Tables 18 and 19 provide summary of components of five most critical attributes of minimal and leading CSS. Components of attributes in tables 18 and 19 are categorized on the basis of expert groups so as to allow identification of convergence and divergence of opinions across the groups.

Attributes	Agri-Food Companies	Knowledge Institutions	NGOs
Engagement with MSGs	1. Chose that are really large &	1. Chose that help meet government	1. Don't strive to participate in MSGs
	mainstream	regulations	
			2. Chose on the basis of supply chain
	2. Chose that include stakeholders	2. Chose that have stakeholders who	threats, balanced external/internal
	with largest immediate effect on	have knowledge of markets & risks,	representation, MSGs goals
	company's brand & value	new ideas about products, solutions &	
		special skills	
Measurement of CS outcomes	1. Measures activities & don't	Measures internal processes related	Measures internal processes related to
	establish specific metrics for outcomes	to energy, water & waste & not along	energy, water & waste & not along
		value chain	value chain
	2. Measures progress for internal use		
Basouraa Commitment	1. Supported at senior executive level		1 Must invest 20/ 50/ of budget
Resource Commitment	but not part of corporate strategy		1. Must lilvest 5% - 5% of budget
	but not part of corporate strategy		2 No dedicated CS officer/team:
	2 Don't have champion at senior		additional work give to existing staff
	executive level but have some interest		additional work give to existing starr
	at grass root level		3. 10% of budget to shift from current
	2		to new reality
Integration of CS with traditional	Everybody may not have same	1. CEO is monitoring CS	1. Somebody is independently
management & control systems	motivation level but everybody is	implementation	responsible for CS
	engaged		
		2. Training programs for top	2. Do not use all of potential HR of the
		executives but not for middle	company for improvement
		management & bottom part	
		t T t t t ord	3. Enterprise Resource Planning
Processes to identify CS	1. Internal inspection of plants	1. External review by 3 <sup>rd</sup> party	1. Internal scan to identify one or two
Issues/Initiatives		auditors/consultant	internal CS issues
	2. Study industry trends	2. Closed men heard meeting to	Dentrierree her eenierree en elle
	2 Observe serve stitem	2. Closed room board meeting to	2. Kank issues by seriousness & effort
	5. Observe competitors	Identity CS issues	required to bring change

## Table 18: Critical Attributes and Components of Minimal Corporate Sustainability Strategy of Global Agri-Food Firms

4		TT 1 1 T 1	NGO
Attributes	Agri-Food Companies	Knowledge Institutions	NGOs
Engagement with MSGs	1. Chose that have broad CS focus	1. MSGs identify themselves and	1. Chose on the basis of diversity of
	2. MSGs identify themselves &	company chooses ones that have with	stakeholders & extent of focus on
	company chooses ones with	peer companies as members, has open	value chain issues
	stakeholders who are impacted by their	access, appropriate scope and provide	2. Chose that have stakeholders from
	business & may impact their supply	pusiness case for engagement	value chain, NGOs and GOs that can
	chain, cost structure, regulations &	2. Chose that have well defined	help them identify barriers &
	brand	governance structure, high meeting	opportunities and create value
	3. Chose stakeholder groups that have	frequency	3. Chose that are broad, balanced, has a
	talent & expertise to help the company	3. Chose that provides pooled	governance structure at executive level,
	with relevant CS issues	resources to scale up demonstration	has the ability to frame severity of
		evel CS projects	issue and can recommend response,
			high meeting frequency and aim for
			win-win solutions
Measurement of CS outcomes	1. Measures outcomes & not activities	Measures progress on issues that	1. Measures supply chain costs of
	2. Measures progress for public	company is associated with	implementing CS projects
	reporting and get it 3d party audited		2. Measures the impact of business on
	3. Measures progress on publicly		environment
	declared targets along TBL		3. Measures employee fluency with
			CS issues
			4. CS outcomes that are important to
			stakeholders
Resource Commitment	1. Dedicated 3% of budget	1. Rewards system for executives tied	1. Dedicate at least 5% of budget/sales
	2. CSS incorporated in business	with CS metrics	& invest 5% of revenues in supply
	strategy	2. May not have a dedicated budget	chains
	3. Moderate investment to ensure field	3. Supported at board & senior	2. Dedicated staff & VP or senior
	implementation	executive level & really tied with	director in CS leadership position
	4. Dedicated team and full time CS	corporate strategy	3. No fixed budget allocation but may
	officer		have to reallocate budget differently
			4. Link CS responsibility with
			incentives structure for all company
			workers

## Table 19: Critical Attributes and Components of Leading Corporate Sustainability Strategy of Global Agri-Food Firms

Table 19	(contd')
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Attributes	Agri-Food Companies	Knowledge Institutions	NGOs
Integration of CS with traditional	1. Full & transparent communication	1. Rewards system for executives tied	1. Engage everybody in tracking
management & control systems	among various departments	with CS metrics	progress and mandatorily report to CS
	2. CS issues are treated as 100%	2. Integrate CS outcomes in job	team
	compliance issues	descriptions & hire based on	2. Each department prepares annual
	3. Quarterly internal audits every	awareness of CS issues	work plan for CS, set goals and report
	4. Share benefits with employees from	3. HRM procedure that awards to	outcomes from both the financial &
	implementing CS programs	employees to participate in the process	CS projects to the upper management
		of sensing CS issues	
Processes to identify CS	1. Identify critical issues for	1. Open communication with	1. Identify critical issues for
Issues/Initiatives	stakeholders, value chain actors &	critical societal groups	stakeholders & company's business
	company's business	2. Engage all workers in CS issues	2. Supply chain analysis to identify
	2. Identify global CS concerns &	identification process	supply risks, threat to quality &
	chose issues where company is	3. Assign task to a manager to	vulnerable supply chain actors
	influential & can benefit itself & TBL	identify stakeholder pressures	

Data pertaining to top five critical attributes was further analyzed to discuss major findings. These findings have been discussed below. General research findings from the interviews of sustainability experts have been discussed separately under the title of minimal and leading strategies. These components have been summed up in figure 16 using five two- headed arrow diagrams, one for each attribute. The left hand side of each arrow gives attribute components for minimal companies and for leading companies on the right-hand side. Figure 17 is useful in identifying key distinctions in CSS for minimal and leading companies.

# Figure 17: Continuum of Potential Components of Critical CSS attributes for Minimal and Leading Strategies



Figure 17 (cont'd)



Critical attribute 1: Engagement with multi-stakeholder groups (MSGs) focusing on agri-food sustainability

Engagement with MSGs is the top ranked attribute based on number of experts. In fact this attribute figures in the list of top five attribute for all three expert groups. Response from various sustainability pundits can be broadly categorized into two:

- (1) What are the selection criteria for identifying relevant MSGs?
- (2) What steps companies take to engage with the MSGs that they have identified to work with?

a) Minimal Strategy:

According to Business experts, selection criteria for minimal effective companies is primarily based on identifying MSGs that present greatest imminent threat to the company, that is, group of participants who have the largest immediate impact on firm's value and brand. They also look for MSGs that are large and mainstream and have broad scope in terms of sustainability issues. There are two possible reasons for choosing mainstream MSGs:

(1) They allocate limited resources for CS and so they have to look for widely recognized groups that can make fast and significant impacts internally.

(2) Large groups may also have leading sustainable companies as their members (but for completely different reasons) who do most of the work in making the MSG platform effective and get actually engaged in various work streams of multi-stakeholder organizations. Hence minimally effective companies can afford to behave as silent observers

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and utilize positive externalities through networking and by using the brand image of large MSGs.

KI experts are of the opinion that MSG selection is also determined by government regulations because these groups can help minimally effective firms to address compliance issues efficiently. They are also interested in those MSG organizations that have knowledge of the markets, can help them in identifying risks and propose practical solutions in the form of new ideas and products. One of the NGO experts commented that since MSG engagement is a complex and costly process for most minimally effective companies, therefore they do not strive to become part of any MSG. Other NGO experts agreed with the first NGO expert that engaging with MSGs involves subtle intricacies and it is expensive, but they did not accept the idea that the minimal strategy would be to not participate in MSGs. Instead they opined that minimal strategy is to participate in MSGs that is less diverse, that is, like minded stakeholders. Therefore minimally effective companies chose less diverse MSGs and the more insulated ones because they are working on internal sustainability issues so they don't need to engage with broad stakeholder groups.

As already stated, minimally effective companies do not actively participate in MSGs and they do not engage in dialogues and joint efforts with other participants. They attend annual group meetings for networking and educational purposes. The engagement process of minimally effective companies with MSGs is summarized by one of the Business experts:

"Those that get involved in the least way are the ones who are observers. They don't participate in projects, they don't engage in the dialogue directly. They just show up for informational purposes and to network. So companies who show up to observe and network, to me is the minimum. They are there so that they can claim they are members of a MSG. So they do it because they want credit for being a member and ok they pay \$10K per year to help fund some of the work but that's the bare minimum you should do and it does lead to green washing in my opinion."

#### b) Leading Strategy:

The nature of global agri-food firms' operations is such that they have to delve in many, many sustainability issues ranging from sourcing of raw materials, sustainable agriculture, and fair-trade practices on one hand to labor management, supply chain labor standards and product safety & quality on the other. Along with each of these issues also comes large number of stakeholder groups. Therefore leading sustainable companies are engaged in careful selection of MSGs among several such groups.

According to Business experts, the leading strategy in relation to MSGs selection criteria would focus on the diversity of the group, dialogue leader, expected tangible outcomes, and time length of the engagement process. Leading sustainable companies are less likely to participate in MSGs that are mostly comprised of peer companies because they have other avenues to work with them. Instead leading companies are more likely to get involved with groups that have participants that they did not get the opportunity to engage in the past. One of the experts stressed on private and public sector participation in MSGs. The diversity of the MSGs based on private-public participation ensures that leading firms can gain knowledge on multiplicity of perspectives that critical societal organizations have on sustainability issues and problems. The decision to work with a MSG is not merely educational rather it is based on companies' recognition of their sustainability objectives, materiality, potential gaps between capacity and objectives, and major influencers.

Important MSGs selection criteria according to KI experts are: open access, appropriate scope, participation of peer companies, frequency of meetings, and multi-laterality. One of the KI experts shared that leading sustainable firms depend on their sensing capacity to decide whether or not MSGs have appropriate scope of work. To quote him/her:

"A leading firm is proactive in searching their stakeholders (which follows from the environmental scanning part of the process), they actually sense if stakeholders are having a problem and then leading firm communicates with the stakeholders that they sense are having a problem that relates with the company. The leading firms are more interested in those stakeholder groups which are highly likely to be affected by the business operations of the firms according firm's own perception. The firm's ability of sensing is really important that makes a difference between being proactive vs. reactive. So to be a leading vs. being the minimal acceptable standards, sensing plays a key role. Sensing means to be able to sense others and to be sensitive to what is happening out in the world and if some groups in the society are affected by you."

A unique and interesting selection criterion is scalability of demonstration level sustainability projects. While the minimal strategy is limited to execution of pilot projects, leading strategy would aim at scaling up of pilot projects along the value chain, associated communities and also improve overall performance of the sector. Such an effort would require vast amount of resources. Therefore leading sustainable companies look for MSGs that would allow them to pool resources by engaging with the members from vertical and horizontal supply chains.

Kissinger (2012) addresses the issue: Can a standard be developed that goes through the entire supply chain? He comes to the conclusion that if companies in the horizontal supply chain were to act in cooperation, it is possible to scale the standards along the entire chain. Sustainable purchasing links between companies and farmers in cocoa production is a case in point. Promotion of sustainable farming practices in cocoa production by chocolate manufacturers may have been pursued to ensure long-term supply of high quality cocoa, but it resulted as the most viable option to promote sustainably certified cocoa production. Mars got involved with farmers

following Cadbury's decision to source fair trade coca in 2009. Mars became committed to buying sustainably certified cocoa by 2020 through the Rainforest Alliance and UTZ certified programs. Now Nestle plans to purchase cocoa beans from farms and cooperatives which are using sustainable practices. It is important to note that the power of scale that was brought by Mars, Nestle and Cadbury by working with farmers and engaging with the traders and processors in cocoa certification process.

Business experts and NGO experts were in sync with each other over the issue of optimal composition of MSGs. They argued that there is not a strict formula for MSG composition, i.e., the leading strategy is not to always look for particular class of stakeholders to be part of multistakeholder platforms as a guiding principle to engage with particular MSGs and not with others. Leading strategy does not focus on a fixed set of stakeholder groups for instance NGOs but also targets relevant value chain stakeholders. MSG engagement is driven by two types of actors: (1) the big voices like NGOs, government, industry associations, big companies etc, and (2) value chain partners. A top-down approach would be to base your CSS on these loud voices, whereas the bottom-up approach would be to also take into account the views of company's grass-root level constituency. This is done to get the complete picture of sustainability issues. Therefore by focusing only on a specific group of stakeholders would jeopardize company's ability to comprehend the complexity and multi-dimensionality of sustainability issues. Therefore the leading MSG engagement strategy would encompass both the approaches. A Business expert commented that:

"I do think that you need to make sure that you have a kind of balance. Often times you would see this with companies that they had gone out of balance and focused on NGOs and neglected those within the supply chain and they were not incorporating the feedback from supply chain as they were making some of the decisions that would ultimately have a significant impact on the organization. So it is important to have the NGOs in to represent external perspective but it is also important to make sure that the organization balances by engaging in your supply chain as part of the process and discussion because the issues can be multidimensional and hence complex."

Another Business expert responded to the question on MSG composition saying that:

"I think that companies that get it right use a combination of both: top down and bottom up efforts. And it used to be in the past that big companies or the big voices (Government or company) would follow this top down approach. I think for you to be truly successful in sustainability initiatives, you need to follow top down because any program needs a kind of direction. It can't be an anarchic process. But it needs to be based on listening to your constituency and that is the true stakeholder engagement that I am talking about. So the efforts need to be top down and bottom up."

NGO experts reiterated the need to capture the complete picture by getting involved with multiple layers of the supply chain and at the same time engage in meaningful dialogues with NGOs and government organizations.

KI experts are of the opinion that for MSGs to be able to get involved with leading sustainable companies, should be comprised of: knowledge institutions like universities (both social science and life sciences experts), civil society organizations, NGOs (both international and local where the issue is located), value chain businesses, employee representatives, government (both local and national), and potential funders. These stakeholder groups represent an ideal composition of organizations on a multi-stakeholder platform.

It is interesting to note that Business experts and NGO experts believe that leading sustainable companies do not have a formal policy on MSG composition because they want to expand the scope of their engagement along the value chain, whereas KI experts find that leading sustainable companies look for optimal MSG composition. However they also list that value chain stakeholders must be present in a MSG. Therefore whether or not the leading strategy is
concerned with optimal MSG composition, businesses in the supply chain are likely to be an important constituent of a MSG platform.

### Critical Attribute 2: Measurement of Sustainability Outcomes

Measurement of sustainability outcomes is the overall top ranked attribute along with the attribute called engagement with MSGs. It also figures in the list of top five attributes for all three expert groups. Response from various sustainability experts can be broadly categorized into three:

- 1) What types of sustainability outcomes are measured?
- 2) How do agrifood companies ensure credibility of sustainability outcomes?
- 3) Should everything be measured or can be measured by agri-food companies?

The first response category (types of sustainability outcomes) can be analyzed separately in relation to minimal and leading strategies, however the last two (outcomes credibility and should everything be measured) forms part of the generally discussion on the state of sustainability in the agri-food industry. Therefore they have not been analyzed separately for minimal and leading strategies.

Several criteria were indicated by experts for confirming credibility of sustainability outcomes. Business experts emphasized on objectivity of outcomes, that is, sustainability targets are expressed in terms of quantity and time for objective measurement of outcomes. Even if firms fail to meet long-term targets, progress on outcomes must be reported annually. Credibility is strongly connected with materiality of initiatives because companies can set aggressive targets but if stakeholders can see connection between what they are doing and why they are doing then it is easier to build trust. That is why leading companies are directly investing in their supply chains and at the same time they are shifting away from philanthropic activities.

Leading sustainable companies report their outcomes publicly. The quality of data is enhanced if the data and the data collection process are made public. A KI expert opined that leading companies are increasingly using GRI standards in reporting as it helps to transfer credibility to the process.

Business expert: "So companies that measured something that doesn't get reported publicly, is going to be lazier and sloppier about the data quality than someone who actually reports it publicly and gets 3rd party audited. I think that piece about public transparency and public reporting is the key component of the data measurement because that public nature of it literally forces the discipline of making sure that your data is good. And I think that people who don't disclose some of their data publicly aren't have good quality data. When we went to the point of disclosing our data publicly, we got lot cleaner about how we are collecting and how we were documenting it and where the data source is coming from. It took to us a whole different level of data task."

Audits and certifications are considered critical for outcomes credibility by the three groups of experts. NGO experts as a group were most emphatic in emphasizing on third party audits where as Business experts and KI experts also see increasing value in conducting second party audits. NGO experts opined that the information that has been gathered needs to cross-checked through third party audits. Third party audits can verify sustainability investments, measurement processes and data quality. However protocols used in such audits must be transparent to public and should be meaningful in their scope.

Audit done by a company from the value chain of the focal company is termed as second party audit. The advantages of second part audits is that they give considerable control over the auditing process, confidentiality, consistency in the auditing process and a greater frequency as compared to third party audits. However, when it comes to establishing credibility of outcomes,

third party audits are very much the order of the day.

Reporting of negative outcomes and missed targets can also lend transparency to sustainability outcomes.

Business expert: "If you have notices of violations on an air permit or water discharge permit or you have a facility isn't meeting their safety standards etc, you should report them. We have a couple of facilities that just couldn't get traction on energy reduction goal. We disclosed that and we talk about the challenges because it's important to tell people where your challenges still are and then commit to addressing them."

Leading sustainable companies are more likely to report missed targets and negative outcomes of

their operations than minimal companies because leading companies are on a different level of commitment to sustainability issues whereas minimally effective firms are driven by short term benefits and not in enhancing the sustainability of the agri-food systems.

NGO expert: "I think that gets back to the transparency issue. So they are being transparent by saying that this was our goal and this is what we achieved and we were not able to make it even on our own standards. I think that it is critical for internal management use if they are really committed to making changes internally whether it is leadership or whether it be practices. Externally, it has got tremendous marketing value. I think it's smart but it requires committed as committed org. So this aspect of transparency can be better utilized by leading firms. I don't think minimally effective firms would play that card."

Theorists and practitioners alike have long juggled with the issue of being able to measure everything related to sustainability performance (Carroll, 2000; Wood, 2010). The interview process reflected a similar level of disagreement among Business experts that is already observed in the literature. Some experts emphasized that everything should be measured because in their opinion what does not get measured does not get managed for long. Also if

progress is not objectively measured then the very notion of progress becomes contentious.

Hence there is a need to establish objective sustainability metrics along the 3P line.

Business expert1: "I think you need to work really hard. You need to find the way to measure everything because again if you don't then it becomes an internal debate and discussion about whether or not progress is being achieved. So you need to find ways to measure"

Business expert2: "I would say that anything that we do that is sustainability, we have to be able to measure it; we have to be able to report against it and the progress year over year. Otherwise people would lose interest and you won't be able to show the results of your actions."

All NGO experts and KI experts and some Business experts do not think that everything should be measured. Too much emphasis on being able to measure sustainability outcomes and on developing metrics can take away the focus of agri-food companies from crafting and implementing good programs. Many sustainability issues and outcomes especially along the social dimension cannot be expressed quantitatively and are not comparable across space and time. They are also concerned that developing metrics can sometimes be an expensive process particularly in cases where the onus of demonstrating sustainability metrics are available, careful consideration should be given to the cost on the supply chain actors.

Business expert: "There has been a big pressure for measuring and metrics in sustainability field and I feel that we need to do more and then measure rather than immediately put the pressure on measuring. People say when it doesn't get measured it doesn't get done and I am a little bit concerned about that because Sustainability is so emerging and new that it requires so many forces coming in together that if you immediately roll out metrics without crafting your programs with care, then it is a missed opportunity."

KI expert: "The reason they are not able to get metric on social is because it is so critical and there are so many very, very difficult subjects such as minimum wage, contracts, that they represent particular problems of particular companies. You can produce a measure on people, you could; it is just that it is so political. In fact it may not be required to measure social outcomes at the moment but may be in future when we discuss on living wage, and whether the people are getting the fair deal or not. So the methodology to measure them has to first become commonly accepted."

NGO expert: "I am sensitive to the issue that a company needs to have a metrics to manage it better. I think boiling everything down to measurements is a huge mistake because its distracting away from genuine work for better outcomes or even recognition of things that are in good condition already, is also difficult. Lot of social issues doesn't well boil down to numbers and they are also not comparable. Water issues in California in the growing areas are much bigger issue than in Illinois. So, small incremental change in California might mean more than a big improvement in Illinois."

a) Minimal Strategy:

KI experts and NGO experts are of the opinion that the minimal strategy is focused on measuring internal progress related to energy, water, waste etc. They do not generally track resource use in the supply chain. Sustainability outcomes measured are therefore aligned with initiatives which are generally designed to enhance internal sustainability.

NGO expert1: "Minimal firms would be more focused internally. Their tracking is internal, it's not as integrated with promotions and things like that and it's not part of the growth strategy."

NGO expert2: "I would expect it to be internal (energy, water and waste) oriented, within the four walls as opposed to including metric that track resource use through with suppliers."

According to Business experts, minimally effective companies generally measure their sustainability 'activities' and not 'outcomes' and even if they measure outcomes they do not report it externally because they have not established outcomes based metrics.

Business expert: "Minimally effective companies they are going to be involved and their involvement or metric is going to be based on activities as opposed to outcomes. They are not ready to establish specific metrics for the outcomes. Over time organizations move from activity to outcome based in relation to their measurement." b) Leading Strategy:

Leading sustainable companies measure outcomes as opposed to activities. Their metrics are clearly defined and relate to environmental and social indicators like water use, emissions, soil health, biodiversity, etc. Leading companies also measure external sustainability outcomes in addition to internal one. Measurement of external sustainable outcomes is centered on critical raw materials for the company. The leading strategy is to choose indicators that can measure the impact along all triple bottom-line.

Business expert1: "It depends on what type of companies they are, I think most leading companies has set carbon reduction targets, many companies like coke has set water targets and there are some who do fair trade, palm oil which connect back to human welfare, human rights. So you are looking at environmental sustainability targets, you are looking at human sustainability targets and then there are some animal welfare targets that are set. This is a list of targets particularly found in leading firms. You also have safety targets like food safety, traceability targets."

Business expert2: "Well it depends on how you set up your Sustainability program. If you know that you are active on a certain raw material, say Unilever and palm oil, they will define their own metrics: say per cent of sustainability palm oil, per cent of deforested land."

KI expert: "It depends on the country, the risk profile, the company policy, the sector of prevention and so on. The bottom line will be the companies will be tested in money. Any outcomes that are measured without a value will not be measured for long."

NGO expert: "Leading firms measure things that are core to their operations such as the impact of the production of their raw materials have on the environment...... Leading firms are not only concerned with internal measurement of their sustainability performance but track sustainability performance external to the firm like the impact of their operations on the outside environment, they are concerned with issues along the supply chain, their procurement and marketing practices and of their suppliers."

Unlike the minimal strategy, the leading strategy is to track sustainability performance along the

supply chain in relation to suppliers' procurement and marketing practices. One of the interesting

internal outcomes that these firms have recently started to measure is their employee's fluency

with sustainability issues. This goes back to earlier discussion of companies programs and policies for organization-wide infusion of sustainability culture.

### Critical Attribute 3: Resource Commitment level of top management to CSS

Resource commitment level of top management is overall ranked third in the list of attributes of CSS of agri-food firms. In addition to that the resource commitment attribute individually figures in the list of top five for all three groups of experts. Response from various sustainability experts can be broadly categorized into three:

(1) Role of CEO and top management in championing the cause of CS

- (2) Dedicated sustainability teams
- (3) Dedicated budget

a) Minimal Strategy:

Sustainability experts agree that since the objective of the minimal strategy does not include integration of CSS with the companies' corporate strategy, it is unlikely that top management would promote setting up of or hiring of a new team of professionals who would focus on sustainability issues of the company. In the absence of dedicated team of workers it is not uncommon for minimally effective companies to simply layer sustainability related work on their employees as additional tasks.

However for CSS to become effective at the minimal level, the top management including the CEO understands that corporate sustainability is an important part of their business and should not be considered as subset of public relations. One of the NGO experts strongly expressed that allocation of resources should be very carefully managed by minimally effective companies because there is a very thin line between green washing and being minimally effective in a genuine way:

"What is very disappointing is if the resources are redirected through marketing and PR function. It should be considered as green washing if more effort is put in trying to figure out how to talk about things than doing things. More work is done to justify current practices as opposed to creating a culture of continual improvement and recognizing that we are not there yet."

On the question of whether minimally effective companies have dedicated budget for CS, the views of sustainability experts did not converge. Some experts from all groups argued that the minimal strategy would be to have a dedicated budget for carrying out sustainability related efforts. Minimally effective companies are in transition stage from the past reality where they were driven by bottom line considerations at the expense of social good to the new reality where they are expected to broaden their work to incorporate triple bottom line issues along social, economic and environmental dimensions. Sustainability practices would therefore have to influence every aspect of firm's activities such as procurement, manufacturing, packaging, distribution etc. Hence a critical mass of financial resources is necessary to help the company gain required momentum on the path of sustainability trajectory.

The size of recommended budget allocation is in the range of 3 - 10% of annual sales. NGO experts mentioned that minimal firms often tie in CS investments with their product prices, i.e. they promise that a proportion of product sales revenue would be spent of sustainability initiatives. These marketing based strategies are sometimes effective because it attempts to raise awareness among consumers by ensuring that what they are buying is directly related to sustainability and it also makes CS investments more visible and credible. b) Leading Strategy:

In the case of leading sustainable companies, CSS is part of the strategic planning process for the entire organization and therefore it is incorporated as part of their business strategy. The board or the top management will allocate resources for implementing CSS and would also delegate specific responsibilities to the management like any other part of the corporate structure. The role of CEO in incorporating CS as part of overall corporate strategy is therefore considered critical by experts across the three groups. In the words of a NGO expert:

"I put this as #1 attribute because unless the company has got this really tied in very closely CEO with the senior board, it would be completely ineffective because if they don't believe in it and show that belief and really that it's something that's important to them....."

Business experts strongly stressed on the importance of CEO or somebody in the leadership

position to participate in the CSS formulation process:

"I think Unilever is a great example of that. If you look at CEO of Unilver, he would be gold standard for executive commitment for Corporate Sustainability. He talks about it publicly, he talks about it frequently and he has held his ground in the face of adversity when people have challenged him for his position in a strategy. He is incredibly articulate about the issues, so doesn't just sit back what his people tell him to say, he really fundamentally understands it. So that's the pinnacle. He is being branded up for not publishing quarterly reports because he wants his company to think more long term than quarterly. Part of it is truly having leadership, not necessarily to have a CEO to be that person, but it still helps. But having some folks in very high levels in the organization who can speak through a certain level of expertise and are willing to speak publicly and frequently enough so that message doesn't get lost."

There is convergence of views on the issue of dedicated team for CS. According to Business experts and KI experts, the leading strategy is that companies are most likely to have a dedicated team of workers and not dump it on employees who are already working on other priority areas. Employees in the CS team are therefore cent percent engaged in sustainability programs, for instance: identifying sustainability issues, stakeholder dialogues, measuring sustainability

performance and in helping the organization to meet sustainability related certifications and industry standards. The CS team is not supposed to be a big team of workers but it should have a minimum critical mass to carry out CS programs effectively.

Business expert: "I don't think sustainability groups need to have army of staff but they do need staff. There needs to be someone who has sustainability in their title. People have to have access to some money and resources to actually and effect change. It can't just happen b/c the boss wants it. And so having executive leadership willing to invest on corporate people to go do this kind of work, that kind of hard to do when you are trying run a business for profit because people like me are considered overhead and in tough business times it gets hard to justify overheads. But the good leader is who really get it, they do."

Business experts shared that leading companies are however concerned over the quality of workers in CS teams. The CS team should ideally be balanced in the sense that most sustainability programs require technical knowhow of the system and at the same time the team members should also be well versed with managerial principles of organization in order to justify their activities from the business perspective. Often times, sustainability teams is heavily loaded on one side of the required skills and expertise.

"Well there are two things like in every operation: the quality and the quantity. I think we need to identify a good number of resources to be well staffed but we also need good caliber of resources. So it is a matter of quality and quantity both. Sustainability is very, very complex and if we just scratch at the surface that' not helping. In fact it can be more detrimental. I think that companies that are leaders need to identify resources not only in number but in quality to make sure that this is not just a communication effort but we are truly moving the needle in the right direction."

Similar to the minimal strategy, sustainability experts did not reach consensus that whether or not the leading strategy would be to have dedicated budget for sustainability programs. Interestingly, the reasons to have or not have dedicated budget are same: (1) CSS is integral to overall business strategy of the company and (2) CS issues are very complex.

In the words of a NGO expert who did not support the need to have dedicated budget commented:

"For leading firms, the question is not about how much they commit to Sustainability, it is about how they do business. It is not separate. It is intrinsic to the business and so a 100% of the budget is committed to it and none of the budget. It is just it is what they are. So you can interpret it in either way: none or all of the budget."

According to a NGO expert, in order to be credible, the leading strategy is to commit at least 5% of their earnings to CS. Another Business expert responded by saying that sustainability programs that are loaded with cost without payback is just another marketing program. Therefore sustainability at the end of the day is cost neutral. Resources have to carefully deploy to ensure field implementation of the project. Although leading companies direct CS programs from head-quarters, they ensure oversight and become involved in facilitation and moderation on the site of actual action. However many a times, it is not necessary to have budget allocation. It is more about allocating same resources differently.

"It may also possible that money that is saved from energy, water and waste reduction is shifted towards those things which cost more. So it may not be a dedicated budget but reshaping or reallocation of the same budget. The art of doing it well is how you reallocate."

Critical Attribute 4: Integration of management systems that track sustainability with traditional management & control systems

This attribute is overall ranked fourth and figures in the top five attributes for KI experts and NGO experts. Quite surprisingly, Business experts did not attach much significance to this attribute as otherwise anticipated because it related to those company policies that are designed and implemented to make corporate sustainability an inclusive process. The aim is to create a

culture of sustainability which represents a behavioral shift in the way company conducts its day to day business ranging from how it recycles waste paper in the corporate office on one hand to the company's procurement and distribution strategy on the other hand.

The other surprising part is that the NGO experts ranked this attribute as number one along with resource commitment at top management level. It is indicative that societal organizations, in addition to monitoring companies' impact on external environment are also becoming increasingly interested in identifying robust sustainability related management systems that can help companies to sustain their sustainability programs. They are looking for signals that agri-food firms are not only investing money along the value chain but they are also working to create a culture of sustainability among their employees from top to bottom.

### a) Minimal Strategy:

According to Business experts, the minimal strategy at best, attempts to ensure an overall engagement in the sustainability policy of the company. However it does not aim everybody to have the same motivation of doing so. The KI experts are of the opinion that the primary responsibility of integrating CS with traditional management and control systems is with the company leadership. They personally monitor the work and performance of sustainability programs. At the same time they also try to expand the interest for pursuing sustainability related goals among executive managers through training programs.

For NGO experts, one of the ways in which minimally effective companies are working on the issue of integration is through development of metrics to capture progress towards sustainability goals. It is anticipated that once they have tested the efficacy and reliability of metrics for sustainability performance, it would become easier to effectively delegate the responsibility for performance to individuals inside the company, thereby integrating sustainability with other management systems at the minimal level.

b) Leading Strategy:

There are several leading strategies to integrate sustainability with other management and control systems. Importance of fully transparent sustainability communication to company employees from top to bottom is emphasized by several experts across three groups. The purpose of internal communication is to engage employees in sustainability related dialogues and they are made part of the sustainability issue identification process. In the words of a KI expert:

"So the fundamental process is that employees are specified and then they are made entitled by the company of identifying issues that they as employees consider being threatening sustainability either social or environmental sustainability. In one word it means: internal process of awareness of firm's sustainability. This is the most bottom-up internal process."

Apart from the knowledge management procedure, leading sustainable companies also use human resource management procedure to infuse the sustainability culture inside the company by making them responsible for sustainability successes and failures. They often institute internal awards such as green employee of the month. They are also using the applicants' knowledge of sustainability issues as a criterion in their hiring decisions. Some companies also have the policy of punishing their employees even to the extent of firing them in case of repeated failures to practice sustainability principles of the company. Therefore internal monitoring by company executives is part of the integration process.

While minimal strategy focuses on training senior executives, the leading strategy is to have training programs to make even the bottom part of the company aware about sustainability issues and targets and how to report sustainability issues within the company. In essence leading strategy in relation to the integration attribute would involve frequent checks, clear-cut accountability, transparent communication and a rewards-punishment system to engage internal stakeholders in the sustainability process and at the same time track sustainability performance as part of overall management and control system of the firm.

### Critical Attribute 5: Processes through which sustainability issues are identified

Knowledge institutions consider the process of identifying sustainability issues as the second most important attribute of CSS for agri-food firms. The 'process' attribute ranks 5<sup>th</sup> in the overall list of top five attributes.

### a) Minimal Strategy:

The focus of the minimal strategy is to identify sustainability issues that are internal to them. For instance water and energy usage, waste reduction etc. Minimally effective companies rank these issues on the basis of several criteria: level of seriousness, availability of substitutes and level of response needed to bring change. Both Business experts and NGO experts agree that following the initial scan of their internal environment, these companies identify two to three areas of sustainability to bring improvement in the most cost effective manner and also generate profits for themselves. The nature and goal of environmental scan process is coherent with their motivation to pursue sustainability related issues.

The next question is: What processes constitute the minimal strategy for the internal scan of the environment? There are several ways of doing that: Business experts believe that the minimal strategy would be to use internal inspectors whereas KI experts argue that to be minimally effective, companies are also taking the services of external auditors and consulting companies. b) Leading Strategy:

Sustainability experts from all three groups agreed that interest of leading sustainable companies in sustainability issues are focused at two levels: (1) internal sustainability issues and (2) issues along the value chain. Therefore leading companies face a larger portfolio of issues. The Business experts are of the view that leading sustainable companies first define their priority areas of sustainability and cross check them with sustainability challenges and opportunities. The guiding principle in the identification process is the notion of materiality. The Global Reporting Index defines material issues as:

"Those that have a direct or indirect impact on an organization's ability to create, preserve or erode economic, environmental and social values for itself, its stakeholders and society at large."

There are several leading strategies for identifying material issues of sustainability. One of them is to look at key raw materials that these companies rely on. Once the firm has identified its key raw material(s), they look at a broad set of challenges and opportunities that can affect the availability of raw material and that would define the priority areas of the company. Next step would be to identify areas in which the company is influential (that is, it can benefit itself and the community and the environment) and relevant stakeholders. One of the comments given by a Business expert summarizes that how the process of issue identification for leading sustainable companies is governed by the materiality consideration:

"So I think that leading companies recognize that and it again goes back to the materiality of things. It is what issues are most material for the company, have they built their strategy. Around those things and then do they put together a portfolio of programs and policies and projects to go address them. For example: water is a big deal for coke. They use heck amount of water to make coca-cola and they need lot of water to make the ingredients that into coke, sugar particularly. And so coke has invested a lot of resources and money in water program. So they don't only work on water because they also know that packaging is a big deal for them. They are selling liquid in a bottle or water. And so they have also spend a whole lot of time and money and resources on PET recycling and recycling in general and they have put together a portfolio of initiatives that really address the top two challenges that they deal as a company."

Significance of materiality consideration as the dominant process of issue identification is accepted by NGO experts as well. The following statement by an NGO expert indicates the importance of identifying sustainability issues that are material to agri-food companies:

"When you think of why firms are motivated about sustainability, one of the real reasons is because they are concerned about the sustainability of their supply. So they are worried about their future supply. Coco for instance, all these firms are investing in top three coco producing countries because without those countries, producing that amount of coco is not possible."

In addition to the materiality criterion, the KI experts indicated that leading strategy includes some other processes as well, for example the internal process of awareness of firm's sustainability. This bottom-up internal procedure engages all employees in identifying issues, both social and environmental, that they consider can threaten sustainability. Leading firms are also engaging in an open two way communication process with critical societal organizations and government organizations to understand critical sustainability issues, reasons that these stakeholder groups oppose their operations and how they can mutually resolve them. Unlike the minimal strategy, leading sustainable companies do not attempt to identify potential issues in closed board room meetings but they take the risk of holding conversation with people and organizations that have some idea and opinion about their business. In the words of one of the KI

experts,

"And so real engagement really only occurs when you have the courage to step out of your comfortable boardroom, walk out and start redoing a real engaging conversation with the people and the organizations that have some sort of idea about your business. We have a big problem in our country with the laying egg industry. It is all processed and the animal is reduced to an egg machine and if you look at these operations they are pretty horrible. What we did is that together with people from laying egg industry and others, we developed a complete new system that still has the same production potential and financial benefits comparable to tradition stables and it is still a large operation but it is managed and operated completely different from what we have been used to. "

A Business expert opined that leading agri-food firms are also trying to expand their network by participating with NGOs and various sustainability consortiums in order to understand potential needs of the stakeholders. Hence the leading strategy would use both bilateral and multilateral communication with stakeholder groups to identify sustainability issues.

### Thematic Network Analysis of Leading Corporate Sustainability Strategy

The focus of the section on interview findings was to describe the top five critical CSS attributes. Several distinctions were made between leading and minimal strategies across the top five critical attributes of CSS and across the three stakeholder groups of sustainability experts. The top five critical attributes are tied together through the underlying CSS. However the specific nature of CSS and linkages among critical CSS attributes was not explicitly revealed. The descriptive analysis cannot help in this regard. We need a more refined analytical methodology to identify subtle linkages and themes across critical CSS attributes. To that end, thematic network analysis is proposed as the methodology for data analysis. In the thematic analysis, the researchers can also bring in their own observations and sense of judgment in interpreting the data.

Thematic analysis was used to find global themes for minimal and leading strategies but no such patterns were identified for minimal sustainability strategy. This finding indicates that minimal sustainability strategies are still in evolutionary stage and lack a formal structure at this point. Therefore discussion and findings in this section are applicable to leading strategies.

For identifying global themes, the analysis was not restricted to the top five critical CSS attributes; instead data pertaining to all the nine CSS attributes was analyzed. This was done because global themes to be actually global must be applicable to all CSS attributes.

In order to carry out thematic network analysis, the interview transcripts were studied multiple times and a preliminary chart was prepared to record commonly occurring themes (basic themes) in each transcript. The organizing chart was modified until all key themes were included and a saturation point was reached (Bischof et al. 2011; Creswell 1998). The next step involved cross-transcripts analyses of issues identified from within individual transcripts in order to identify organizing and finally global themes (Braun & Clarke 2006).

Four global themes were identified for leading companies. These are: (1) Sustainability strategy is integral to corporate strategy, (2) Materiality considerations guide sustainability strategy, (3) Focus of CSS is on both, internal and external environment of the agri-food Company and (4) Sustainability is a multi-dimensional field

### Global Theme 1: Sustainability strategy is integral to corporate strategy

Following Attride-Stirling (2001), 47 codes were derived on the basis of recurrent issues regarding various types of efforts that leading companies exert to align sustainability strategy with their business strategy. These 47 codes are associated with 14 distinct sustainability experts which were then reduced to 21 basic themes.

The 21 basic themes were clustered into five organizing themes on the basis of similarity of underlying issues. The organizing themes are: (1) Resource commitment to corporate sustainability, (2) organization-wide infusion of sustainability culture, (3) Multi-stakeholder groups' selection criteria, (4) Selection of sustainability initiatives/projects, and (5) CSS communication.

Global Theme	Organizing Theme	Basic Theme (frequency of	Theme Description
		occurrence)	
CSS is integral to Corporate Strategy	Resource Commitment to Corporate	Dedicated Budget(3)	Allocation of funds to CS programs
	Sustainability		like other business functions
		Budget re-allocation(1)	Budget reallocation to meet CS goals
		-	& standards
		CEO leadership(6)	CEO provides leadership to CS
			programs
		Dedicated team(4)	Hire new personnel to integrate CS
			work with the company
		Sustainability officer(2)	One senior manager has full time
			commitment to CS
	Organization-Wide	Direct Board Reporting(2)	Sustainability officer reports directly
	Infusion		to board
	of Sustainability Culture		
		Job description(2)	Integrate CS outcomes in job
		• · · ·	description
		Accountability(3)	Accountability at senior executive
			level
		Performance Management(2)	Integrate CS outcomes in
			performance management
		Employee engagement & feedback(2)	Opportunity for employees to engage
			& provide feedback on CS issues
		Link with incentives structure (4)	Leadership tangibly links CS
			responsibility with incentives
		Internal process of awareness of	Everybody is engaged in tracking &
		firm's sustainability(2)	recording issues & progress
		Supplier contracts (1)	A non price criterion is CS standards
			while negotiating contracts with
			suppliers

# Table 20: Thematic Network Analysis of Leading CSS

### Table 20 (cont'd)

Clobal Thoma	Organizing Thoma		Pagia Thoma (fraguanay of	Thoma Description
Giobal Theme	Organizing Theme		Basic Theme (frequency of	Theme Description
			occurrence)	
	MSG Selection Criteria	ſ	MSG and CSS(1)	Choose MSGs who suit their CSS
		J	Scale- up(1)	Choose MSGs that can help them to
		J		scale up projects along the entire
		L		value chain
	Selection of Initiatives/	(	Linked with business strategy(2)	Choose projects that are linked with
	Projects			strategy of the company
			Competitive advantage(1)	Choose initiatives to position itself
		Ì		against competitors
			Organization behavior & process	CS initiatives can lead to change in
		C	change(1)	OB & processes
	CSS Communication	)	DNA(1)	CSR reports communicate that CS is
				part of DNA
			Internal Communication Strategy (2)	CS issues & programs are part of
				internal communication strategy to
		Ì		give it top priority
			CEO & CSS(2)	CEO talks about it publicly,
				frequently, sets the tone of CSS,
		C		articulates CS agendas
Materiality Considerations guide CSS	MSG Selection Criteria	(	Impact on stakeholders(4)	Engage with MSGs in which
				participants represent influenced
				group of stakeholders from firm's
				activities
			Impact of stakeholders(4)	Engage with MSGs in which
		$\langle$	<b>-</b>	participants can influence supply
				chain, cost structure, brand &
				regulation
			Compliance Standards(1)	Engage with MSGs who can help in
			• · · · ·	meeting compliance standards for key
		C		raw materials
		(	Raw materials & Metrics (2)	Critical raw materials determine
	Outcomes Measurement			design of sustainability metrics &
		$\left  \right $		what would be measured
			Supplier Performance (1)	Supplier performance is measured to
		C		create value

# Table 20 (cont'd)

Global Theme	Organizing Theme	Basic Theme (frequency of	Theme Description
		occurrence)	-
	Selection of Portfolio of Initiatives (	Materiality & Credibility (2)	Clear cut connection with materiality
			of sustainability initiatives gives them
			credibility
		Investments in supply chains (2)	Direct investments in supply chains at
			the farm level
	1	Consumers Interest (1)	Choose initiatives to address CS
			issues that are of interest to
			consumers
		Sourcing of raw material (1)	Programs are based on whether key
			raw materials are sources from spot
			markets or through strategic alliances
CS is multi-dimensional	MSG Composition	NGOs & external perspectives (2)	Need to include NGOs in MSGs to
			represent external perspectives as CS
			issues are multi-dimensional &
			complex
	-   · · · · · · · · · · · · · · · · · ·	Value chain participants (4)	Agricultural value chains are very
			complex and CS issues related as
			multi-dimensional, hence include
			value chain participant to understand
			issues
	Selection of Sustainability Initiatives	Balanced Sustainability Portfolio (4)	Choose a portfolio of initiatives that
			are along all 3P dimensions
		Multidimensional Projects (2)	Same project/initiative produces
			effect along 3P dimensions
	Sustainability Metrics	Metrics & Programs (2)	Sustainability is so emerging &
			multidimensional that metrics are not
			designed before initial phase of
			project implementation
		Multi-dimensional indicators (4)	Sustainability indicators are chosen
			along the 3P dimensions of a
			particular initiatives

Table 20	(cont'd)
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Global Theme	Organizing Theme		Basic Theme (frequency of	Theme Description
			occurrence)	
Focus of CSS is both on internal &	Issue Identification	(	Issues in Supply Chain (6)	Scan for issues critical for supply
external aspects	Process			chain partners
			Loud Voices (3)	Scan issues associated with NGOs,
		ĮΙ		GOs & other societal organizations
			Bottom-Up Approach (3)	Engage in conversation with
				company's constituency
			Internal Scan (5)	Top management works internally to
				identify CS issues
	MSG Composition	1	NGOs, KIs & Traders (2)	Engage with NGOs, knowledge
	-			institutions & traders
			Farmers' Associations & Supply	Engage with famer level associations
			Chain (3)	& other supply chain partners
			Peer Companies vs. Public-Private	Less likely to participate with peer
		$\langle  $	Members (1)	companies but more with public-
				private members
			Opponents & Critiques (2)	Engage with MSGs which have
				opponents and attempt to understand
				cause of conflict & develop dialogue
				& consensus
	Selection of Initiatives Portfolio	٢	Supply Chain Initiatives (3)	Choose issues that are critical for
		$\left\{ \right\}$		stakeholders
		τ	Scale Initiatives (3)	Scale initiatives in supply chain
	Outcomes Measurement	(	Internal Metrics (3)	Detailed metrics to measure internal-
				level progress
			Employee participation (1)	Track employee participation level in
		$\left\{ \right\}$		CS issues & programs
			Supply Chain Outcomes (4)	Measure outcomes critical to supply
				chain partners & their cost of
		U		measuring performance
	Sustainability Communication	(	Influencers (1)	Communicate directly with public
				sector influencers like NGOs & GOs
		Л	Consumer Feedback (1)	Collect feedback from consumers
		)		through social media
			Employee Reporting (2)	Employees are trained to report CS
		U		issues and concerns

Global Themes and CSS Characteristics					
CSS is fully integrated with broader corporate strategy (Global Theme 1)	CSS focuses on actions that produce material results (Global Theme 2)	CSS encompasses all three dimensions of sustainability (Global Theme 3)	CSS arises from a complex process that encompasses both internal and external perspectives, initiatives and engagement (Global Theme 4)		
CSS resources (budget, leadership and staffing) represent major commitments comparable to other key elements of corporate strategy CSS activities (reporting, accountability, performance measurement, engagement and incentives) infuse a sustainability culture organization wide CSS projects/initiatives are selected to enhance corporate strategy	CSS has a meaningful set of outcomes measures, especially for raw material use and supplier performance CSS projects/initiatives are selected based are they material and credible impact on investment, consumer/customer interests, and procurement. External CSS stakeholders are selected for engagement because they are materially influenced by the company's CSS actions and can be	CSS outcome metrics emphasize all three P's CSS projects/initiatives are selected to create a balanced portfolio across all three P's External CSS stakeholders are selected for engagement based on their multi-dimensional and external (public policy, knowledge, and societal) perspectives across the 3P's	Issues for inclusion in CSS arise from internal and external scanning and engagement. CSS outcome metrics arise from consideration of internal management needs and buy-in from employees and supply chain partners CSS projects/initiatives are selected to attract key stakeholders for engagement and effectively scale-up actions with supply chain partners External CSS stakeholders are drawn from NGOs government knowledge		
continually emphasizes its priority across the organization External CSS stakeholders are selected for engagement based on their ability to contribute to enhancing corporate strategy	influential in framing actions and supporting compliance		institutions, supply chain partners to balance public-private interests and to engage opponents and critics as well as allies CSS communication bridges internal and external actors to ensure that key influencers are informed and give input; feedback is collected and incorporated into strategy evolution, and management/employees carryout and report actions and outcomes.		

# Table 21: Summary Findings from Thematic Network Analysis of Leading CSS for Agri-food companies

The organizing theme 'resource commitment to corporate sustainability' occurred 16 times in the data. It appears that agri-food companies are realizing that it would not be possible to move the needle in the right direction by piecemeal efforts. Rather, a more dedicated and purposeful effort would be required to align their business activities with societal and environmental issues. Business experts are of the view that if CSS is to become part of the strategic planning process for the entire organization then by definition the top management will allocate resources to the sustainability process. Various types of resources that leading sustainable companies have been found to commit to sustainability targets include: dedicated budget, budget reallocation, and dedicated sustainability team with a sustainability officer. On the top of the list is the willingness of the CEO to provide sustainability leadership and commitment towards sustainability objectives.

Business expert: "I think Unilever is a great example of that. If you look at CEO of Unilver, he would be gold standard for executive commitment for Corp Sustainability. He talks about it publicly, he talks about it frequently and he has held his ground in the face of adversity when people have challenged him for his position in a strategy. He is incredibly articulate about the issues, so doesn't just sit back what his people tell him to say, he really fundamentally understands the. So that's the pinnacle."

NGO expert1: "Minimum is that they want to see that there is evidence that the CEO is personally looking at the results of the ongoing steering committee which is driving this forward. That's the minimum."

NGO expert2: "It may also possible that money that is saved from energy, water and waste reduction is shifted towards those things which cost more. So it may not be a dedicated budget but reshaping or reallocation of the same budget. The art of doing it well is how you reallocate."

The organizing theme 'organization-wide infusion of sustainability culture' occurred 18 times in the data. Leading companies are engaging everybody in their organizations in tracking and recording CS issues and progress. Employees have the opportunity to talk about CS issues including metrics, practices and processes. There is a reward system for learning and participating.

NGO expert: "It goes very much hand in hand with general culture of innovation and b/c it is asking people to innovate, so there are lot of very simple and visible things that can be done to help workers see that how sustainability is being practiced. Secondly there has to be rewards for learning and participating or are there extra things available to people that they interest in but there is no reward for it."

Sustainability is included in the job description. In addition to hiring decisions, some companies base firing decisions on sustainability performance of employees. It is also used for performance management. Leading strategy would have training programs for executives and also for the bottom level workers to make them aware of sustainability issues and how to report such issues within the company. In addition to price of the raw material, leading companies are taking keen interest in the sustainability performance of their suppliers while negotiating or renegotiating supplier contracts.

The organizing theme 'MSG selection criteria' occurred two times in the data. Leading sustainable companies are interested in working with those stakeholder groups that can help them attain their sustainability targets. Therefore given the CSS of the company, MSGs would be selected on that basis. In addition to that, leading strategy would go beyond implementation of demonstration level projects and would seek to scale it up along the company's supply chain in order to realize full value of their efforts. Therefore leading sustainable companies are interested to work with MSGs who can provide them with resources and partners that would give them ability to scale-up sustainability initiatives.

The organizing theme 'Selection of sustainability issues/themes' occurred four times in the data. There are large numbers potential sustainability initiatives related to agri-food companies. The leading strategy is to choose a portfolio of initiatives that is aligned with the company's business strategy and has the potential to create societal value at the same time.

Business expert: "I think those who have a methodical approach that links what projects and initiatives they choose as the strategy of the organization and those who pick initiatives that are good for their business but also good for the greater good and have a broader impact on social or environmental issues beyond just the benefits to the organization."

The organizing theme 'CSS Communication' occurred five times in the data. Leading sustainable companies do not confuse CSS with corporate communication. In fact they use corporate communication in the form of CSR reports to signal that CSS is an integral part of their corporate strategy. In fact the CEO or a top executive of the company talks about CSS publicly and frequently.

The five organizing themes together indicate that leading agri-food companies consider CSS to be integral to their corporate strategy. This forms the global theme that clusters the five organizing themes and the lowest ordered basic themes.

### Global Theme 2: Materiality considerations guide CSS

A total of 18 codes were derived on the basis of recurrent issues that indicate that leading strategy is formulated to address sustainability topics that have a direct or indirect impact on company's ability to create or jeopardize value associated with the triple bottom line, for itself and its stakeholders. These 18 codes are associated with eight distinct sustainability experts (adding items from row 2 of table 22) row which were then reduced to nine basic themes.

The nine basic themes were clustered into three organizing themes on the basis of similarity of underlying issues. The organizing themes are: (1) MSG selection criteria, (2) Outcomes measurement, and (3) Selection of portfolio of initiatives.

Emerging Theme	Business expert	KI expert	NGO expert
88			
	(N=6)	(N=5)	(N=5)
	(		(
Sustainability strategy is integral to			
~8	$(10)^{1}$	4 (11)	5 (15)
	5 (19)	4(11)	5 (15)
corporate strategy			
1 00			
Materiality considerations guide CSS	4 (11)	1(1)	3 (6)
~			
Sustainability is multi-dimensional	5 (11)	1(1)	2 (6)
Focus of CSS is both on internal and			
	6 (21)	3 (4)	4 (18)
	÷ (21)	5(1)	. (10)
external aspects			

 Table 22: Sustainability Experts Group-wise Frequency Count for Global Themes of CSS

<sup>1</sup>Five different Business experts referred to the global theme that sustainability strategy is integral to corporate strategy 19 (not all unique) times.

The organizing theme 'MSG selection criteria' occurred nine times in the data. The qualitative data analysis indicates that leading sustainable companies are more likely to engage with those MSGs whose participants can influence their supply chain performance, cost structure, brand, and regulation and compliance issues related to their key raw materials. Therefore instead of choosing popularly known and widely accepted MSGs, the leading strategy identifies those stakeholder groups who can help companies create 3P value along their supply chain, ensure future supplies of raw materials and become more efficient. In fact leading sustainable companies are less likely to work with peer companies and more with private-public partners because there are other several avenues to work with peer companies.

KI expert: "The leading firms are more interested in those stakeholder groups which are highly likely to be affected by the business operations of the firms according firm's own perception."

NGO expert: "I think leading firms take a step back and say where is our business vulnerable if we are not paying attention to issues of Sustainability and they identify those and then they have a business rationale to make major commitment. Think about Unilever, they are the largest buyer of seafood in the world. They realized that the fisheries have collapsed or at the verge of collapsing. If they can't get fish they have got no fish business and so investing in the Sustainability of the fisheries, investing in raising the standards of the industry is to their own benefit and to everybody's benefit."

The organizing theme 'Selection of portfolio of initiatives' occurred 6 times in the data. The leading strategy is to select a portfolio of sustainability initiatives and projects on the basis of key raw materials and around CS issues that are of key interest company's customers. Leading sustainable companies invest time and energy in understanding issues that are critical to their stakeholders and that create greatest impact on their business. For instance supply of a key raw material is one of the major reasons that why so many agri-food companies are now directly investing in their supply chains at the farm level.

Business expert: "The Company needs to identify its priority areas and cross check that with Sustainability challenge and opportunities. A clear example would be: water is everything for coca-cola. So every company has key raw material that they rely on. That needs to be front and centre - what are the limiting factors to the operations of a company and it can be a tangible raw material like water and it can be many other aspects."

NGO expert1: "Why firms are motivated about Sustainability, one of the real reasons is because they are concerned about the sustainability of their supply. So they are worried about their future supply. Coco for instance, all these firms are investing in three top coco producing countries because without those countries, producing that amount of coco is not possible. So when you get into direct investments at the farm level by these firms, one could make the argument that it is related to their bottom line."

NGO expert2: "The other part of credibility we can think is in terms of materiality of initiatives. Firms may set very aggressive targets but if you see a clear cut connection between what they are doing and why they are doing. How important is materiality in terms of establishing their credibility? The Sustainability targets of these big firms are directly related to their supply chains. We don't see a lot of altruism."

The organizing theme 'Measurements of Outcomes' occurred three times in the data. The overlapping theme across the corresponding responses is that for leading companies it is the critical raw material that determine what would be measured and the design and choice of sustainability metrics.

The three organizing themes together indicate that the leading CSS is significantly determined by materiality considerations. This forms the global theme that clusters the three organizing themes and the lowest ordered nine basic themes.

### Global Theme 3: Focus of CSS is both on internal and external aspects

A total of 43 codes were derived on the basis of recurrent issues that indicate that the focus of CSS of leading companies is not limited to internal aspects of their business operations, rather they are able to expand the ambit of their strategy to work on sustainability concerns pertinent to their stakeholders like supply chain partners and societal groups. The 43 codes are associated with 13 distinct (adding row 4 of table 5) sustainability experts which were then reduced to 16 basic themes.

The 16 basic themes were clustered into five organizing themes on the basis of similarity of underlying issues. The organizing themes are: (1) Issues identification processes, (2) MSG composition, (3) Selection of portfolio of initiatives, (4) Outcomes measurement, and (5) Sustainability communication.

The organizing theme 'Issues identification processes' occurred 17 times in the data. All the three groups of respondents agree that leading companies investigate for sustainability issues by examining their supply chains and stakeholder groups. The reason behind this comprehensive approach is the comprehensive nature of their sustainability strategy. For instance, if their goal is to reduce the carbon footprint, they would make sure that the initiative is carried out with the same effectiveness along both ends of their supply chains.

Business expert: "Identifying and incorporating the interest of stakeholders. This is one of the processes that leading firms use for identifying Sustainability initiatives."

Therefore in order to align their expectations with what is pertinent for external stakeholders, they design appropriate processes and invest resources. Some of these processes include open communication with critical stakeholder groups, supply chain analysis, engaging everybody inside the organization to become part of the environmental scan process etc. In general, organizational employees are trained to identify internal issues of sustainability whereas the task of scanning for external issues is entrusted on a dedicated team of internal sustainability team which reports directly to the CEO and in some cases to the board.

The organizing theme 'MSG composition' occurred eight times in the data. Leading sustainable companies are interested to work with MSGs which include NGOs, knowledge institutions, and supply chain members including farmers' associations, traders, public-private members and peer companies. The leading strategy attempts to understand conflicts and from there try to develop a dialogue and come up to a consensus. Since one of the most difficult things that leading companies have to do is to give up their pre-conceived idea of doing business, so the success of CSS boils down to careful management of MSG engagement process.

NGO expert: "If you look at different MSGs that leading firms are willing to engage, the ones that I see in my work are with NGOs, research institutions and also with traders (supply chain actors on their supply chains), getting them involved in the conversations and may be even going down at the farmer level associations and farmer representatives."

KI expert: "The composition would involve different layers of the whole supply chain; it would include GOs and NGOs that have a stake in the issue. The purpose of that would be to capture the full picture of how different initiatives might actually affect and create value for not just themselves but for the stakeholders. And perhaps identify ahead of time what the hidden barriers and opportunities are that would ensure a smoother and more successful implementation"

Business expert: "One of the other things so that they could distinguish leading organizations from minimal organizations is that they actively seek out stakeholder input, So rather than assuming that I know the environment in which I operate, I engage them and ask them what they look at our activities and

companies, what is of interest to them, what is of concern to them about who we are and what we do and actively engage in a process of joint fact finding as a way to beginning to identify and then address those issues. So I think that leading companies would do that by directly soliciting with firm stakeholders."

One important observation that was not explicitly revealed by the qualitative data is related to the choice of other potential MSG participants versus peer agri-food companies. The Business experts did not consider working with peer companies in MSGs of significant value because there are other potential avenues to work together.

Business expert: "So really what we look at is who is leading the dialogue, what is their expected outcome, is there a cost to participate, expected outcomes, how long is the process of engagement: so is it a one-time meeting or ongoing project, we look at who else is at the table and opportunities for us to engage with parties that we didn't engage with prior or don't have access to directly, how diverse is the stakeholder group. So for example I am less likely to participate in a group of all of my peer and competitor companies, because I already have lots of ways to involve and engage with them. I am more likely to get involved with groups that are more diversity in terms of private and public sector participation, that may have opponents or critiques."

It appears that the leading strategy is to engage with MSGs having participants other than companies from horizontal value chains for carrying out demonstration level sustainability projects. Their goal is to learn and implement sustainability related innovations and technologies, comply with regulatory standards, and prepare themselves for anticipated ones.

Business expert: "So you do have to select your stakeholders and you have to look at it internally to find out who can make an impact on the org. So stakeholders who will impact on business, that is how they justify the investment of engaging with them b/c being a stakeholders' long-term ability to influence your supply chain, cost structure, regulation, your brand and other perceptions and attitudes, so some of it is simply a matter of prioritization."

However we do find companies engaging with peer agri-food firms in bilateral and multilateral settings like SAI, GSCP etc, (Dentoni and Peterson 2011). So what is the key difference in engaging with peer companies versus others? One of the KI experts expressed that leading companies are struggling to scale up the projects from the demonstration level.

KI expert: "The problem with resource commitment is that sometimes that it is too much. You throw a lot of resources in pilot projects and then you can't scale it because you put all your eggs in one basket, so scalability is a clear issue."

Therefore one possible explanation for leading sustainable companies' interest in working together with competitors is to gain resources and power of scale to be able to scale-up sustainability initiatives along the value chain (Kissinger 2012).

KI expert: "Some of it is about pre-competitive collaboration and there is a nice example around cocoa where the challenge is too big for one firm and you have to pool your resources raising the overall performance of the sector rather than coming in as a vertical supply chain. You have to do it with the help of horizontal supply chain relationships, in order to build the sector capacity. That's one real important thing to scale."

The organizing theme 'Selection of Portfolio of Initiatives' occurred 6 times in the data. Leading

strategy is to choose initiatives that address critical issues for stakeholder groups. Leading

sustainable companies are not interested in doing only demonstration level projects but want to

scale up initiatives along their own facilities and also for their supply chain partners.

NGO expert: "If you look at their portfolio, some of the ones that we have seen have been in relation to reducing their overall carbon or ecological footprints, and taking that all the way to both the ends of the supply chain. They do supply chain analysis carefully to determine reduce carbon emissions, footprints and different levels of environmental impacts. That is one feature of the portfolio and I would say another would be direct investment to the more vulnerable supply chain actors such as farmer communities. You can see specific investments in the supply chain at the farm level. I think that is a real sign that they have got some skill in the game and they are interested in that."

Business expert: "Leading companies have invested the time and energy to understand what are the issues that are critical to their stakeholders and that create greatest impact on the business and wherever those issues would be identified by the stakeholders are the ones that are incorporated in this CSS."

The organizing theme 'Outcomes measurement' occurred eight times in the data. Leading sustainable companies, in addition to having detailed metrics to measure internal level progress such as energy and water usage, waste reduction, employee participation level; also measure

outcomes that are critical to the supply chain partners and their cost of using the sustainability metrics.

The organizing theme 'Sustainability communication' occurred four times in the data. Leading companies report about pertinent sustainability issues, initiatives and progress to external as well as internal audience. They communicate directly with public sector influencers like GOs and NGOs. They collect feedback from consumers using social media and also report to company employees and train them as to how to report about sustainability issues with the sustainability leadership.

The five organizing themes together indicate that the leading CSS has both, an internal and external focus. Therefore this forms the global theme that clusters the five organizing themes and the lowest ordered 16 basic themes.

### Global Theme 4: Corporate Sustainability is multi-dimensional

A total of 18 codes were derived on the basis of recurrent issues that indicate that leading companies consider the nature of corporate sustainability to be multi-dimensional and they accordingly formulate their CSS to address this multi-dimensionality. The 18 codes are associated with eight distinct (adding row 3 of table 5) sustainability experts which were then reduced to six basic themes.

The nine basic themes were clustered into three organizing themes on the basis of similarity of underlying issues. The organizing themes are: (1) MSG composition, (2) Selection of portfolio of initiatives, and (3) Sustainability metrics.

The organizing theme 'MSG composition' occurred six times in the data. Leading sustainable companies understand the necessity to work with critical societal organizations like NGOs in order to accommodate external perspectives because sustainability issues are multidimensional and complex. Owing to complexity of agricultural value chains and related multidimensional issues, these companies are willing to work with their value chain partners.

NGO expert: "I think often times they look at their supply chain and look at their stakeholders and then other times they are pressured into taking into the account that certain stakeholders think that they haven't taken into account. So that's where the role of NGOs and research institutions comes into play because they can often time identify things that may be some of fine spots."

KI expert: "In agriculture and this is the very key. Value chains are quite long and complex and if you don't know everybody's perspective, food companies often try to implement things that aren't conducive to the way that the value chain works."

The organizing theme 'Selection of sustainability initiatives' occurred six times in the data. Leading strategy would help companies decide to work on a portfolio of sustainability initiatives and projects such that they are able to address all the three primary dimensions of corporate sustainability, that is, economic, environment and social dimensions. In fact the leading strategy attempts to extract sustainability benefits along all the three dimensions or at least two of them from one sustainability initiative. If companies fail to do so then they choose multiple initiatives that can help them to address initiatives along all three dimensions of sustainability.

Business expert: "The best thing for me is where they cover all three (3P). So I can give you 5 examples of where we implemented a project that was part of our strategy had positive environmental consequences, positive social and economic consequences. That's what we are looking for. We don't want to play in one area or the other. We want to play where we effect changes in all of them. There are some instances where projects are going to be more heavily skewed on one or the other but you have to kind of balance that. So you are not doing everything from a foundation standpoint, and you have a big strategy on ending child hunger, that's great but that doesn't help the environmental situation. So we balance out some of that naturally and how we select projects, but the real work are the ones that makes impact to your footprint year over year, we look for that have attributes

that are all of the above. So we look for projects and initiatives that are multidimensional in scope."

The organizing theme 'Sustainability Metrics' occurred six times in the data. Leading sustainable companies choose sustainability indicators along the 3P dimensions of a sustainability initiative. In fact owing to emerging nature of sustainability as a discipline and its multi-dimensionality, some Business experts argued that companies should not rush to design sustainability metrics before the initial phase of project implementation. This approach is quite contrary to the traditional understanding that what does not get measured does not get managed for long. The traditional approach is quite applicable to traditional managerial functions where the terrain is quite well understood but the same cannot be assumed in the case of sustainability issues. Therefore preliminary stages of project execution can help design appropriate and issue specific sustainability metrics.

The three organizing themes together indicate that the leading CSS of agri-food companies accounts for multi-dimensional nature of sustainability issues. This forms the global theme that clusters the three organizing themes and the lowest ordered six basic themes.
### Corporate Sustainability Strategy and the Conceptual Model of CSP

The conceptual model of CSP that was proposed in the second essay is comprised of 3 latent constructs and 8 observed variables. The latent constructs are: (1) CSR processes, (2) CSR initiatives, and (3) Corporate Sustainability performance. Relationship between observed and latent variables and linkages among the latent constructs is put forward in the form of nine research propositions. The conceptual model of CSP is based on literature review of theoretical models of CSR and sustainability assessment methodologies. In comparison to that, the CSS framework and results from thematic network analysis represent the opinions of three groups of sustainability experts. Therefore a comparison between the CSS framework that is comprised of critical attributes and components and the CSP conceptual model is required for understanding major differences and points of convergence among theoreticians and practitioners of corporate sustainability.

One of the three constructs in the CSP conceptual model is CSR process, which is similar to a critical attribute of CSS, processes for identification of sustainability issues. CSR processes in the CSP model is a latent variable, and the associated manifest variables are environmental scanning, engagement with MSGs, and CSR orientation. Environmental scanning and MSG engagement is recognized by the three groups of sustainability experts as important processes. However orientation towards sustainability (passive, reactive or proactive) was not explicitly identified as a CSR process. Some experts believed that leading companies engage company employees in helping the company to scan the environment for sustainability issues. They also communicate with critical societal organizations like NGOs and work with value chain partners to get a comprehensive grasp over issues that the company must address for enhancing its sustainability. The behavior of leading sustainable companies is similar to firms that are termed as proactive in their CSR orientation.

The CSP conceptual model did not distinguish between leading and minimal strategies. However interviews with sustainability experts suggest that the sustainability strategy for leading and minimally effective companies differ significantly in terms of processes, resource commitment, and other critical attributes of the CSS. The CSP conceptual model could not accommodate leading and minimal strategies together within the same framework as the focus of CSP model appears to be on leading strategies.

The CSP model did not emphasize on value chain relationships: The CSP conceptual model unlike the CSS framework did not explicitly considered the role of value chain partners in designing sustainability programs of and in improving the outcomes of such programs. Sustainability experts stressed several times that one of the predominant ways in which leading sustainable companies distinguish themselves from minimally effective companies is by incorporating inputs of supply chain partners in their CSS. In fact three out of top five critical attributes (processes, measurement of sustainability outcomes, and MSG engagement) talks about role of value chain partners in leading strategy.

The CSP conceptual model suggested that a firm's ability to send credible signals that it is successfully engaged in sustainability practices is positively associated with the completeness of composition of its multi-stakeholder alliance(s) which comprises of knowledge institutions, entrepreneurs, NGOs & governments. In comparison to CSP model's recommendation of adopting the balanced approach towards MSG composition, the CSS study did not recommend

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an optimal composition. In fact the Business experts expressed that leading sustainable companies do not have a written policy towards composition of MSGs, instead they prefer the case by case approach. Several criteria determine the composition of MSGs such as materiality considerations, objective of the MSGs, frequency of interaction etc. Leading sustainable companies prefer to work with non-peer members on these MSGs in the case of new demonstration level projects, technologies, new compliance regimes etc. However when it comes to scaling up the demonstration level initiatives along their value chains, agri-food companies require market power and other resources. Therefore they seek partnership with peer companies to accomplish the task, for example SAI, GSCP etc.

### **Conclusions and Discussion**

The semi-structured interview process with 16 sustainability experts across three stakeholder groups yielded five most critical attributes of CSS for an agri-food company. Further analysis revealed that the leading sustainable companies are attempting to incorporate supply chain specific issues in formulating their CSS. Thematic analysis of interview responses also indicated that leading strategy accounts for sustainability issues that are pertinent to the value chain partners. It is important to do so, first of all for the overall effectiveness of CSS of the focal firm and also for optimal value creation from pursuing CSS. The very nature of sustainability issues is such that companies cannot afford to move towards the sustainability space on their own. Therefore they need to align the objective of CSS with the overall concerns of their supply chain partners.

Minimal strategy was found to be more internally oriented. Whether minimally effective companies have to engage with MSGs, implement processes to track sustainability issues, pick a portfolio of sustainability initiatives or measure sustainability progress, their focus is on internal level sustainability issues that they can easily identify, track progress as well as see direct connection between internal level initiatives and their bottom line. Experts are of the opinion that this behavior should not be viewed as greenwashing because minimal companies are gaining confidence, resources and expertise in the mean time so that they can later expand the boundaries of their CSS to become more mature partners in enhancing the sustainability of agri-food systems.

Qualitative data allowed for in-depth analysis of critical attributes of CSS, however results from the study lack generalizability. Future studies can use results from the study to design a survey for collection of a larger sample of data from various stakeholder groups. One proposed strategy is to design a choice experiment. Discrete choice experiment would allow for estimating generalized comparative relevance of attributes of CSS for agri-food companies. A major challenge in designing the choice experiment is large number of attribute levels and how to assign scores (from low to high) to attribute levels.

APPENDIX

### **APPENDIX: Interview Protocol**

### Ranking Attributes of Successful Corporate Sustainability Strategies (CSS)

In your opinion, what are the 5 LEADING important attributes of an agri-food firm's Corporate Sustainability Strategy that would signal that to you that the firm is successfully engaged in enhancing the sustainability of agri-food system?

Below we list 9 potential (not exhaustive) attributes of Corporate Sustainability Strategies. Please feel free to identify other attributes you think are important. Using the text box to the left of each attribute, please rank your top five attributes by importance.

(1) The primary motivation for engaging in sustainability	
(2) The processes through which sustainability issues / initiatives are identified	
(3) Engagement with multi-stakeholder groups focusing on agri-food sustainability;	
(4) Resource Commitment level of top management to Corporate Sustainability Strategies;	
(5) Portfolio of sustainability initiatives and projects;	
(6) Integration of management systems that tracks sustainability with the traditional management and control systems;	
(7) Measurement of sustainability outcomes;	
(8) Communication of Corporate Sustainability Strategies program(s) and	
(9) Third party audit of Corporate Sustainability Strategies programs	
Additional Attribute #1 (Please describe this attribute in the text box provided below)	
Additional Attribute #2 (Please describe this attribute in the text box provided below)	
Additional Attribute #3 (Please describe this attribute in the text box provided below)	
Additional Attribute #4 (Please describe this attribute in the text box provided below)	
Additional Attribute #5 (Please describe this attribute in the text box provided below)	

Please specify additional attributes.

Additional Attribute #1:

Additional Attribute #2:

Additional Attribute #3:

Additional Attribute #4:

Additional Attribute #5:

### Attributes of Successful Corporate Sustainability Strategies

For each of the attributes you have identified above, please provide your opinions to the questions below. For those attributes that you did not rank in the top 5 for importance, please skip to the next ranked attribute.

## ATTRIBUTE#1: The primary motivation for engaging in sustainability

Why do LEADING SUSTAINABLE food and agribusiness firms adopt/implement Corporate Sustainability Strategies (i.e. what is their motivation)?

What is the motivation for adopting/implementing a CSS that is needed for a food and agribusiness firm to signal that that it has a MINIMALLY ACCEPTABLE CSS?

## ATTRIBUTE#2: The processes through which sustainability issues/initiatives are identified

What processes to identify sustainability issues/initiatives are used by the LEADING SUSTAINABLE food and agribusiness firms?

What are the processes for identifying sustainability issues/initiatives that must be employed in a food and agribusiness firm in order to signal that it has a MINIMALLY EFFECTIVE CSS?

# <u>ATTRIBUTE#3: Engagement with multi-stakeholder groups focusing on agri-food</u> <u>sustainability</u>

What are the characteristics (e.g. composition, structure, objective, etc.) of the multi-stakeholder groups for which the LEADING SUSTAINABLE food and agribusiness firms are willing to engage?

What are characteristics (e.g. composition, structure, objectives, etc.) of a multi-stakeholder group are needed in order for a participating food and agribusiness firm to signal that it has a MINIMALLY EFFECTIVE CSS?

### ATTRIBUTE#4: Resource commitment level of the top management team to CSS

What level of resources of its top management team does the LEADING SUSTAINABLE food and agribusiness firms commit to its CSS?

What is the level of resources of its top management team that a food and agribusiness firm must commit to its CSS in order to signal that it has a MINIMALLY EFFECTIVE CSS?

## ATTRIBUTE#5: Firm's portfolio of sustainability initiatives and projects

What are the characteristics of a portfolio of sustainability initiatives in the LEADING SUSTAINABLE food and agribusiness firms?

What are the characteristics of a portfolio of sustainability initiatives that are required for a food and agribusiness firm to signal that it has a MINIMALLY EFFECTIVE CSS?

# ATTRIBUTE#6: The integration of control systems for sustainability with traditional control systems

What steps do the LEADING SUSTAINABLE food and agribusiness firms take to integrate the management system used to track its CSS with the traditional management and control systems of the firm?

What are the steps that a food and agribusiness firm must take to integrate the management system that track its CSS with the traditional management and control systems in order to signal that it has a MINIMALLY EFFECTIVE CSS?

### **ATTRIBUTE#7: Measurement of sustainability outcomes**

What type of sustainability outcomes are measured by the LEADING SUSTAINABLE food and agribusiness firms?

What types of sustainability outcomes need to be measured in order for a food and agribusiness firm to signal that it has a MINIMALLY EFFECTIVE CSS?

## ATTRIBUTE#8: Communication of the firm's CSS and sustainability programs

What method(s) do LEADING SUSTAINABLE food and agribusiness firms use to communicate its CSS?

What method(s) of communicating its CSS are required for a food and agribusiness firm to signal that it has a MINIMALLY EFFECTIVE CSS?

### ATTRIBUTE#9: The use of third party audits of CSS and sustainability programs

If any, what forms of third party audits are used by the LEADING SUSTAINABLE food and agribusiness firms?

If any, what forms of third party audits need to be employed by a food and agribusiness firm to signal that it has a MINIMALLY EFFECTIVE CSS?

## **ATTRIBUTES: Additional**

### **Current State of CSS in Food and Agribusiness Firms**

Please provide your overall assessment on a scale of 1 - 7 of the current state of Corporate Sustainability Strategies in food and agribusiness firms, where:

° 2	° 3	° 4	° 5	° 6	7 (Agri-
					food firms
					are achieving
					the full
					potential of
					Corporate
					Sustainability
7					Strategies)
	0 2	° 2 ° 3	C <sub>2</sub> C <sub>3</sub> C <sub>4</sub>		

Please provide any additional comments that you might have related to the current state or future expectations of Corporate Sustainability Strategies in agri-food firms.



Would you like to receive copy of the final report?

- Yes
- <sub>No</sub>

# Thank you for your participation

REFERENCES

### REFERENCES

Albersmeier, F., and A. Spiller. "The Reputation of the German Meat Sector: A Structural Equation Model." *German Journal of Agricultural Economics* 59 (2010): 258–270.

Aragon-Correa, J. A., I. Martin-Tapia, and N. E. Hurtado-Torres. "Proactive Environmental Strategies and Employee Inclusion: The Positive Effects of Information Sharing and Promoting Collaboration and the Influence of Uncertainty." *Organization & Environment* 26, no. 2 (May 15, 2013): 139–161. doi:10.1177/1086026613489034.

Attride-Stirling, J. "Thematic Networks: An Analytic Tool for Qualitative Research." *Qualitative Research* 1, no. 3 (2001): 385–405.

Austin, Eileen Kay. *Guidelines for the Development of Continuing Education Offerings for Nurses*. Appleton-Century-Crofts, 1981.

Bischof, Gary H.; Warnaar. "Thematic Analysis of the Experiences of Wives Who Stay with Husbands Who Transition Male-to-Female\*." *Michigan Family Review* 15, no. 1 (2011). http://hdl.handle.net/2027/spo.4919087.0015.102.

Bond, L, M Daube, and T Chikritzhs. "Access to Confidential Alcohol Indsutry Documents: From 'Big Tobacco' to 'Big Booze." *Australian Medical Journal* 1, no. 3 (2009): 1–26.

Braun, V., and V. Clarke. "Using Thematic Analysis in Psychology." *Qualitative Research in Psychology* 3 (2006): 77–101.

Brownell, Kelly D., and Thomas R. Frieden. "Ounces of Prevention — The Public Policy Case for Taxes on Sugared Beverages." *New England Journal of Medicine* 360, no. 18 (2009): 1805–1808. doi:10.1056/NEJMp0902392.

Bruno, K. "The World of Greenwash." http://www.corpwatch.org/article.php?id=244, 1997.

Burch, David, and Geoffrey Lawrence. *Supermarkets and Agri-Food Supply Chains: Transformations in the Production and Consumption of Foods*. Edward Elgar Publishing, 2007.

Cavalcanti Sá de Abreu, Mônica. "Effects of Environmental Pressures on Company Sustainability Strategies: An Interview Study among Brazilian Manufacturing Firms." *International Journal of Management* 28, no. 3 (September 15, 2011): 909–925.

Chopra, Mickey, and Ian Darnton-Hill. "Tobacco and Obesity Epidemics: Not so Different after All?" *BMJ* 328, no. 7455 (June 26, 2004): 1558–1560. doi:10.1136/bmj.328.7455.1558.

Clapp, Jennifer, and Doris A. Fuchs. *Corporate Power in Global Agrifood Governance*. MIT Press, 2009.

Creswell, J.W. Qualitative Inquiry and Research Design. Thousand Oaks, CA: Sage, 1998.

Detre, Joshua D., and Michael A. Gunderson. "The Triple Bottom Line: What Is the Impact on the Returns to Agribusiness?" *International Food and Agribusiness Management Review* 14, no. 4 (2011). http://ideas.repec.org/a/ags/ifaamr/117608.html.

Gorden, Raymond L. Interviewing: Strategy, Techniques, and Tactics. Dorsey Press, 1975.

Gordon, Robert. "Poisons in the Fields: The United Farm Workers, Pesticides, and Environmental Politics." *Pacific Historical Review* 68, no. 1 (February 1, 1999): 51–77. doi:10.2307/3641869.

Guthrie, James, Suresh Cuganesan, and Leanne Ward. "Industry Specific Social and Environmental Reporting: The Australian Food and Beverage Industry." *Accounting Forum* 32, no. 1 (March 2008): 1–15. doi:10.1016/j.accfor.2007.10.001.

Hawkes, Corinna. "Uneven Dietary Development: Linking the Policies and Processes of Globalization with the Nutrition Transition, Obesity and Diet-Related Chronic Diseases." *Globalization and Health* 2, no. 1 (March 28, 2006): 4. doi:10.1186/1744-8603-2-4.

Heyder, M, and L Theuvsen. "Determinants and Effects of Corporate Social Responsibility in German Agribusiness: A PLS Model: CORPORATE SOCIAL RESPONSIBILITY IN GERMAN AGRIBUSINESS." *Agribusiness* 28, no. 4 (September 2012): 400–420. doi:10.1002/agr.21305.

———. "Legitimating Business Activities Using Corporate Social Responsibility: Is There a Need for CSR in Agribusiness?" Innsbruck-Igls, Austria, 2008.

Hingley, Martin K. "Power Imbalance in UK Agri-Food Supply Channels: Learning to Live with the Supermarkets?" *Journal of Marketing Management* 21, no. 1–2 (2005): 63–88. doi:10.1362/0267257053166758.

Hoffman, A. *Competitive Environmental Strategy: A Guide to the Changing Business Landscape*. Washington, D.C.: Island Press, 2000.

———. "Integrating Environment and Social Issues into Corporate Practice." *Environment: Science and Policy for Sustainable Development* 42, no. 5 (2000).

Hutchinson, S., and H. Skodol-Wilson. "Validity Threats in Scheduled Semistructured Research Interviews." *Nursing Research* 41, no. 2 (1992): 117–119.

James, Janet, Peter Thomas, David Cavan, and David Kerr. "Preventing Childhood Obesity by Reducing Consumption of Carbonated Drinks: Cluster Randomised Controlled Trial." *BMJ*: *British Medical Journal* 328, no. 7450 (May 22, 2004): 1237. doi:10.1136/bmj.38077.458438.EE.

Jansen, K., and S. Vellema. Agribusiness and Society: Corporate Response to Environmentalism, Market Opportunities and Public Regulation. London: Sage, 2004.

Kuo, Lopin. "Is Environmental Disclosure an Effective Strategy on Establishment of Environmental Legitimacy for Organization?" *Management Decision* 51, no. 7 (2013): 1462–1487. doi:10.1108/MD-06-2012-0395.

Laufer, William S. "Social Accountability and Corporate Greenwashing." *Journal of Business Ethics* 43, no. 3 (March 1, 2003): 253–261. doi:10.1023/A:1022962719299.

Lin, Haiying. "Cross-Sector Alliances for Corporate Social Responsibility Partner Heterogeneity Moderates Environmental Strategy Outcomes." *Journal of Business Ethics* 110, no. 2 (August 15, 2012): 219–229. doi:10.1007/s10551-012-1423-2.

Louise Barriball, K., and Alison While. "Collecting Data Using a Semi-Structured Interview: A Discussion Paper." *Journal of Advanced Nursing* 19, no. 2 (1994): 328–335.

Marti, J.M., and R.W. Seifert. "Assessing the Comprehensiveness of Supply Chain Environmental Strategies." *Business Strategy and the Environment* 22 (2013): 339–356.

Montgomery, Kathryn C., and Jeff Chester. "Interactive Food and Beverage Marketing: Targeting Adolescents in the Digital Age." *Journal of Adolescent Health* 45, no. 3, Supplement (September 2009): S18–S29. doi:10.1016/j.jadohealth.2009.04.006.

Mueller, Martin, Virginia Gomes dos Santos, and Stefan Seuring. "The Contribution of Environmental and Social Standards Towards Ensuring Legitimacy in Supply Chain Governance." *Journal of Business Ethics* 89, no. 4 (November 1, 2009): 509–523. doi:10.1007/s10551-008-0013-9.

Nay-Brock, R.M. "A Comparison of the Questionnaire and Interviewing Techniques in the Collection of Sociological Data." *Australian Journal of Advanced Nursing* 2, no. 1 (1984): 14–23.

Oberndorfer, Ulrich, Peter Schmidt, Marcus Wagner, and Andreas Ziegler. "Does the Stock Market Value the Inclusion in a Sustainability Stock Index? An Event Study Analysis for German Firms." *Journal of Environmental Economics and Management* 66, no. 3 (November 2013): 497–509. doi:10.1016/j.jeem.2013.04.005.

Owen, D., and T. Swift. "Introduction: Social Accounting, Reporting and Auditing: Beyond the Rhetoric." *Business Ethics: A European Review* 10 (2001): 4–8.

Palpacuer, Florence. "Globalization and Corporate Governance: Issues for Management Researchers." *Society and Business Review* 1, no. 1 (January 1, 2006): 45–61. doi:10.1108/17465680610643346.

Pellegrini, Pablo. "Knowledge, Identity and Ideology in Stances on GMOs: The Case of the Movimento Sem Terra in Brazil." *Science Studies* 22, no. 1 (2009): 44–63.

Rankin, A., A.W. Gray, M. Boehlje, and C. Alexander. "Sustainability Strategies in U.S. Agribusiness: Understanding Key Drivers, Objectives, and Actions." *International Food and Agribusiness Management Review* 14, no. 4 (2011).

Rapley, T. "Some Pragmatics of Qualitative Research Analysis." In *Qualitative Research*, 273–290. Third. Sage, 2011.

Ross, R.B., V. Pandey, and K.L. Ross. "Sustainability and Firm Strategy in U.S. Agri-Food Companies: An Overview of Current Approaches." Working Paper. Department of Agricyultural, Food & Resource Economics, Michigan State University, 2012.

Seale, C. "Using Computers to Analyse Qualitative Data." In *Doing Qualitative Research: A Practical Handbook*, 154–174. London: Sage, 2000.

Thompson, J.D. 1967. *Organizations in Action: Social Science Bases of Administrative Theory*. New York: McGraw-Hill.

Thompson, R. "Reporting the Results of Computer-Assisted Analysis of Qualitative Research Data." *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 3, no. 2 (2002). http://www.qualitative-research.net/index.php/fqs/article/view/864.

Tomlinson, I. "Doubling Food Production to Feed the 9 Billion: A Critical Perspective on a Key Discourse of Food Security in the UK." *Journal of Rural Studies* 30 (2011): 1–10.

Toppinen, Anne, and Kaisa Korhonen-Kurki. "Global Reporting Initiative and Social Impact in Managing Corporate Responsibility: A Case Study of Three Multinationals in the Forest Industry." *Business Ethics: A European Review* 22, no. 2 (April 2013): 202–217. doi:10.1111/beer.12016.

Treece, E.W., and J.W. Treece. *Elements of Research in Nursing*. 4th ed. St. Louis: C.V. Mosby, 1986.

UNCT. "Thematic Analysis 2011: Achieving the Millennium Development Goals in Myanmar." United Nations Publications, 2011.

Vachon, S., and R.D. Klassen. "Green Project Partnership in the Supply Chain: The Case of the Package Printing Industry." *Journal of Cleaner Production* 14, no. 6 (2006): 661–671.

Vartanian, Lenny R., Marlene B. Schwartz, and Kelly D. Brownell. "Effects of Soft Drink Consumption on Nutrition and Health: A Systematic Review and Meta-Analysis." *American Journal of Public Health* 97, no. 4 (April 2007): 667–675. doi:10.2105/AJPH.2005.083782.

Walsh, Fiona. "OFT Hands out £116m in Fines for Milk Price Fixing." *The Guardian*. December 7, 2007.

Wilde, Parke. "Self-Regulation and the Response to Concerns about Food and Beverage Marketing to Children in the United States." *Nutrition Reviews* 67, no. 3 (2009): 155–166. doi:10.1111/j.1753-4887.2009.00183.x.

Wood, Donna J. 2010. "Measuring Corporate Social Performance: A Review." *International Journal of Management Reviews* 12 (1): 50–84. doi:10.1111/j.1468-2370.2009.00274.x.

Zwetsloot, Gerard I. J. M. "From Management Systems to Corporate Social Responsibility." *Journal of Business Ethics* 44, no. 2–3 (May 1, 2003): 201–208. doi:10.1023/A:1023303917699.

### CONCLUSION

This research work attempts to build a framework of Corporate Sustainability Strategy for global agri-food companies. The results provide conceptual, methodological, and empirical contributions to the agribusiness management and CSR literature. From a conceptual point of view, this research integrates theoretical developments in the Business and Society literature with the agribusiness management literature built upon the assumption that sustainability projects need not compete with other important business functions but can assist agri-food companies in creating shared value. The CSP conceptual model integrated several aspects of CSR theoretical constructs into a systematic nomological framework. From a methodological point of view, this research introduces usage of thematic networks in agricultural economics and agribusiness management in order to identify dominant and emerging themes pertaining to CSS of global agri-food companies. From the empirical point of view this research uses event study methodology to investigate linkages between corporate sustainability performance and financial performance and thematic network analysis for identifying critical attributes of corporate sustainability strategy.

In the first essay, results provide evidence of short term negative impact of sustainability on financial performance. However the long term results did not indicate any major difference in the financial performance of companies that are members of DJSI versus those that are not. This has implications for agri-food managers who are more likely to focus on direct linkages between sustainability and bottom line performance and ignore indirect and long term effects of sustainability efforts on overall organizational performance.

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One of the major limitations of the study is that only mean sustainability effects have been estimated. However individual cumulative abnormal returns vary significantly across companies. Therefore further investigation is required to determine the factors that determine the direction and level of abnormal returns on the basis of firm and industry specific characteristics.

Another limitation is related to the DJSI selection process. As only the largest (by market capitalization) 20% of the DJGTI companies are assessed for their CSP, the selection process is likely to be endogenous. This will not blur the impact of CSP on CFP but can also give the impression to equity holders that selection on DJSI is a mere symbolic event. Therefore one recommendation is that if DJSI has to enhance its credibility as measure of CSP, then they have to widen their assessment net, i.e., a larger set of companies should become eligible to undergo the sustainability assessment process.

In the second essay, the conceptual model of CSP attempts to accommodate multidimensional aspects of corporate sustainability. The CSP conceptual model has identified three latent constructs that form the conceptual model. These are CSR processes, CSR initiatives and CSP. Based on review of theoretical developments in the CSR and corporate sustainability assessment methodologies, 8 associated concepts are included in their capacity as observables for latent constructs. The analysis of nomological framework indicates that companies that coordinate CSR processes and CSR initiatives are likely to create higher shared value than those who do not have a systematic framework for identification of sustainability issues and implementation of sustainability programs based on issues and concerns. A key contribution of the second essay is the analysis of structural variables, CSR processes, CSR initiatives, and CSP. The same theme was pursued and extended further in the third essay using the CSS framework. The second essay raised a very important question of where does the CSS fit in the conceptual model of CSP. Existing studies seem to have missed addressing this issue and therefore it is not clear that whether companies formulate CSS post the implementation of sustainability programs or they first determine the CSS and then align the program structure to suit the program mission and goals.

The CSP conceptual model proposed in the essay two can be tested if it holds empirically. Future work can focus on implementing a confirmatory factor analysis model based on the CSP conceptual model. Structural equation modeling techniques can be applied to investigate causal links and test research propositions that have been laid out in the chapter 2.

Finally, results from the third essay identify critical attributes and attribute components of corporate sustainability strategies through semi-structured interviews with sustainability experts from three groups of stakeholders: agri-food businesses, NGOs and knowledge institutions. Results from 16 interviews indicate that five most critical attributes for leading and minimally effective sustainable agri-food companies are: (1) Processes to identify sustainability issues, (2) Engagement with MSGs, (3) Resource commitment to sustainability, (4) Integration of sustainability with traditional management systems, and (5) Measurement of sustainability outcomes. In addition to interview findings, the thematic network analysis of the qualitative data pertinent to leading sustainable agri-food firms revealed four global themes around which 16 organizing themes and 52 basic themes were found to be clustered. The four global themes are (1) Sustainability strategy is integral to corporate strategy, (2) Materiality considerations guide CSS, (3) Corporate Sustainability is multi-dimensional, and (4) Focus of CSS is, both on internal and external aspects.

One of the major contributions of third essay was to adapt the conceptual model of CSP to practitioners' perspective. In the second essay we could not ascertain whether CSS drives process and initiatives or CSS emerges from the structure. Several studies including Ross, Pandey and Ross (2012), Baumgartner and Ebner (2010), indicate that typically companies are choosing their sustainability initiatives without specific reference to their business strategy and sustainability context. So for these companies, CSS emerges from the structure and does not drive the structure. However the third essay has provided some useful insights into the manner in which leading sustainability strategies are designed and implemented. Interview responses and thematic analysis for leading CSS indicates that CSS is driving CSR processes, resources commitment to CSR initiatives and other critical attributes of a CSS and at the same time outcomes of the CS programs affect the design of CSS.

Figure 19 shows that on one hand CSS is deliberate or intended because critical components of CS program (processes, outcomes measurement, resource commitment, integration, and MSG engagement) are driven by CSS and they coordinate with each other through the objectives of the CSS. The primary objective of CSS is to optimize CSP. On the other hand, CSP outcomes are observed both by the companies, employees, value chain partners and other key stakeholders. Through several established mechanisms like MSG platforms, internal communication etc, employees and stakeholder groups are encouraged to communicate their impressions of firms' CSP to the company. Agri-food companies have CSR processes to accommodate recommendations provided by stakeholder groups through MSG engagement, communication with societal organizations and work with value chain partners. In essence the CSS is designed to respond to CSP outcomes. Therefore in the feedback stage, CSS is emergent. Therefore instead of concluding that CSS is emergent or deliberate, it appears that that CSS is adaptive, that is, it is

deliberate and emergent simultaneously through the feedback relationship between CSS and CSP. This finding is consistent with Mintzberg's model of strategy formulation (see Figure 14).

The CSS framework developed in the third essay indicates that four additional structural variables should be introduced in the conceptual model of CSP. These are: Integration of sustainability systems, Resource Commitment level, and Engagement with MSGs and Measurement of CSP. In addition to that there are two major distinctions between the theory driven and practitioners' driven CSP conceptual model:

(1) The conceptual model proposed in second essay considered engagement with MSGs to be part of the CSR processes whereas the conceptual model being proposed here, endows the engagement with MSGs, the status of an individual latent variable.

(2) CSR initiative is a latent construct in the original conceptual model of CSP whereas in the later case, CSR initiative is not being included as a construct in the CSP model.

The use of thematic network technique for analyzing critical attributes of CSS and for understanding dominant themes pertaining to sustainability strategy is a significant methodological contribution to the literature of agricultural economics and agribusiness management. The use of thematic networks as a qualitative methodology for data analysis is lacking in the field of agricultural economics and agribusiness management literature is lacking To my knowledge, thematic networks have not been used as a qualitative data analysis tool in agricultural economics except one study that analyzes development situation in line with the Millennium Development Goals in Myanmar (UNCT 2011).

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Qualitative data allowed for in-depth analysis of critical attributes of CSS, however results from the study lack generalizability. Future studies can use results from the study to design a survey for collection of a larger sample of data from various stakeholder groups. One proposed strategy is to design a choice experiment. Discrete choice experiment would allow for estimating relative relevance of attributes of CSS for agri-food companies and their stakeholders. A major challenge in designing the choice experiment would be large number of attribute levels and in the assignment of scores (from low to high) to attribute levels.

This dissertation work has been able to address some key questions in the arena of Corporate Sustainability. It also opened up several avenues for further work in this field, both at the conceptual and empirical level. Some of these include empirical testing of the CSP conceptual model. Measurement models can be used to test for structural relationships and causal linkages. The idea is to better understand the ingredients or attributes of a successful CS program. Some key questions that can be addressed in empirical research work include: (1) what steps do successful companies take to integrate business strategy with the corporate strategy? (2) How do companies choose their multi-stakeholder partners? (3) How can leading and minimal companies scale up sustainability standards along their value chain? (4) What are the leading companies balance the role of critical societal organizations like NGOs and GOs on one hand and value chain partners and shareholders on the other hand in shaping their CSS?, and (6) Whether CSS is deliberate, emergent or a mix of both the types of strategies?

The present research work hints at some possible answers to these questions however studies using larger data sets would be required to test research propositions from the CSP conceptual model and the CSS framework.



Figure 18: Modified Conceptual Model of CSP (CSS- Adaptive)

Self Authored