

A Content Analysis of Sustainability Reporting to Frame the Heterogeneity in Corporate Environment Sustainability Practices

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Abstract—While extant research has examined many aspects of differential corporate environmental outcomes and behavior, a holistic and integrated view of heterogeneity in corporate environment sustainability (CES) practices remains a puzzle to be fully unraveled – its extent and nature, its relationship to macro or micro level influences, or strategic orientations. Such a perspective would be meaningful for the field given notable strides in CES practices and the corporate social responsibility agenda over the last two decades, in the backdrop of altered global socio-political sensitivities and technological advances. To partly address this gap, this exploratory research adopted a content analysis approach to code patterns in the sustainability disclosures of the 160 largest global firms spread over 8 years. The sample of firms spanned seven industries, nine countries and three continents thereby presenting data rich and diverse enough in several dimensions to be representative of global heterogeneity in CES practices. Through a factor analysis of the coded data, four strategic CES orientations were extracted through the analysis, that effectively straddles most of the variation observed in current CES practices – one that seeks to reduce environmental damage on account of the firm’s operations, another that prioritizes minimalism, a third that focuses on broader ecological status quo, and a final one that champions the ‘business of green’, extending the CES agenda beyond the firm’s boundaries. These environment sustainability strategy orientations are further examined to elicit prominent patterns and explore plausible antecedents.

Keywords—Corporate sustainability, corporate social responsibility, corporate environmental management, environmental strategy.

I. INTRODUCTION

THE concept of corporate environment sustainability (CES) and the phenomenon of diverse environmental outcomes have attracted significant academic attention, especially since the mid-1990s [1]. We are informed by insightful and compelling explanations of varying environmental performances and outcomes, differential approaches to CES and disparate responses to stakeholder pressures, dominantly anchored in neo-institutional, stakeholder, organizational and managerial level influences [2]-[5]. Nevertheless, a holistic and integrated view of this heterogeneity in CES practices still evades us – its extent and nature, its relationship to macro or micro level influences, and any associated strategic or philosophical orientations.

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Over the last three decades, conceptual and empirical research in corporate sustainability (CS) and CES has addressed a wide array of topics, with dominant themes including the examination of sustainability-financial performance linkage and the rationale for firms to pursue sustainability [6]. Literature on environmental sustainability has paid greater attention to investigating pollution control approaches of firms as compared to their product stewardship or “sustainable development” initiatives [7] and this bias is attributable partly to data issues and partly to confounding conceptions of sustainable development in the business context [8].

Insights on how and why firms adopt different approaches and strategies to CES seem to have emerged somewhat indirectly, in the course of investigating specific environmental outcomes and different types of environmental outcomes [1]. These inquiries inform us of organizational and managerial motivations from different theoretical perspectives: Institutional theory and stakeholder influences [3], [5], [8], [9]. We also have accounts of why some firms are more proactive in adopting environmental strategies, in exceeding regulatory standards; or why and how some industries appear to be adopting more sustainable practices than some others [10]. Similarly [11] argued that the presence of more active stakeholders had a significant influence on how firms responded to environmental pressures. Micro level variables also were seen to impact firms’ environmental practices - for instance, [4] demonstrated the influence of differential managerial interpretations of sustainability – seeing it as either an opportunity or as a risk, while CEO characteristics such qualifications and newness to the job were seen to impact firms’ environmental disclosure propensities [12].

Even as these studies have enriched our understanding of different slices of the diversity in firms’ CES approaches practices and outcomes, we still do not seem to have sight of the whole CES heterogeneity “pie”. Extant research reveals relatively few instances of such an integrated approach to understanding CES heterogeneity. The dominant attention in prior studies of “organizations in the natural environment”, have been either been to the specific environmental outcomes or about how organizational outcomes are impacted by the environment, to the extent of 81% [1] and little about the phenomenon of heterogeneity in CES *per se*. In seeking to partly address this gap, this study poses the research questions: What are the various different strategic orientations that firms

adopt in pursuing CES that leads to this heterogeneity? Therefore, this study approaches the puzzle from the other end – that is, to first understand the nature of this heterogeneity holistically. We contend that the backdrop of the significant advances made by business through the transition into new millennium as well as the positive shift in socio-political sustainability consciousness now not only makes for a more matured field of practice that merits scrutiny but also makes it imperative for academia to examine this phenomenon by “turning it on its head”. We believe that this can help advance CS scholarship’s search for a unifying framework [13] to integrate various linkages to explain the heterogeneity in CS strategy, practices, praxis, processes and performance.

The rest of this paper is organized as follows. We first outline the data and methods that we have applied in our exploration to arrive at our taxonomy of CES orientations. We then provide an overview of the triad of orientations that we emerge with in our study, defining them and outlining the associated managerial philosophies. We then discuss some basic trends that emerge across these environmental orientations. Exploring each of these orientations in greater detail and relying on rudimentary statistical trends, we suggest plausible antecedents relevant to each of the orientations, before summarizing our exploratory reflections.

II. DATA AND METHODS

A. Data

With the objective examining CES patterns in different contexts – especially sector and geography - we relied on our own coding of CS reports of the 160 largest global firms (2012 revenues) which had reports (published in English) accessible for at least five years on their website as of June 2013. While in some cases reports were also available for 2013, for the purpose of coding, 2012 was taken as the upper-end cut off to maintain consistency and maximize comparability of reporting timeframes. Accordingly, the maximum number of reports coded and analyzed for any firm was eight (2005 to 2012), while the minimum number was five (2008 to 2012).

The 160 firms were spread across 17 industries, with each of these industries at least having a population of 11 firms. The prominent countries of affiliation included Canada, China, Japan, France Germany, Spain, Switzerland, UK and USA, which for the purpose of geographical analysis, were grouped in four “regions” as China, Japan, Western Europe and North America. Each of these regions can be recognized as distinctive in terms of their relative level of economic development, corporate and institutional environment and also comparative history and social culture - and therefore have significant potential to contribute to the focus of our study, namely the heterogeneity in CES practices.

B. Coding

To make our attempt to arrive at a relevant “universal set” of current CES practices manageable, we used three approaches. First, through a reading (independently done by two researchers) of 70 reports (distributed between 2005 and

2012) of 27 large global firms spanning seven industries and ten countries we generated a list various environment initiatives. Secondly, we scanned extant literature in prominent strategic management journals such as Strategic management Journal, Academy of Management Journal and Academy of Management Review and also more sustainability oriented journals like Journal of Business Ethics, to collate all environmental initiatives/items generated by the scholars based on administered surveys, interviews and analysis of annual reports and environmental and social reports. After eliminating repeat items, this generated a second list of “environmental items from literature”. Thirdly, the MSCI ESG STATS Ratings database (formerly KLD) was examined and four environmental items from their list that corresponded to environmental strengths were picked. A master list of items generated through all three approaches was generated – and after combining several items logically, 16 environmental items were finalized. Using these 16 CES items, we scored the 160 firms earlier identified, on a binary scale of “1” or “0” denoting the presence or absence of discussions in the firms’ CS reports of each sustainability items. This process generated approximately 1200 data points, after eliminating missing data. In a subsequent step (this was carried out after a further grouping of items to generate CES orientation items as detailed in the next section), scores of individual items that comprised different CES orientations were averaged to get a score for each sustainability orientation, for each firm, for each of the years from 2005 to 2012, as applicable

C. Factor Analysis

The next and key step involved factor analysis for identifying CES orientations. In this instance, CES orientations represented an unobserved construct. Exploratory factor analysis (EFA) is one of the commonly recommended methods when a researcher needs to identify a set of latent constructs or hypothetical variables from a set of observed variables. Since the 16 CES items were categorical binary variables, the factor analysis needed to be conducted using polychoric correlation coefficients rather than Pearson correlation coefficients. Accordingly, after generating tetrachoric correlation matrices, the factor analysis was conducted, applying principal component analysis with varimax rotations. The iterations were done after grouping items that were loading in a similar fashion on the factors and dropping items that exhibited high cross loading on multiple factors. Accordingly, the best configuration amongst all the iterations, with minimal cross loading and a clear segregation of items was achieved with four CES factors.

III. CES ORIENTATIONS

A. Conceptualizing CES Orientations

Environmental sustainability initiatives by firms manifest in different approaches and forms, and have at their core the recognition of the dependence on the natural environment of all life forms– whether human or non-human, and therefore the need for ensuring the sustenance of the environment.

Actions of actors have varying impacts on the environment. Most forms of commerce have some deleterious effect on the environment – the question is only of how much, what can be done to reduce or neutralize such impact. Viewed from this perspective, all initiatives that aim to arrest environmental degradation and preserve/rejuvenate ecology can actually be seen as initiatives along a continuum, of protecting the natural ecology. However, clinically speaking, the act of damaging (and therefore the act of reducing or minimizing damage) can be rooted in a different philosophical paradigm from the act of conserving and/or rejuvenating the environment. The factor-variables that emerge in the present research, and the labeling of the factors based on the constituent items attempt to capture the underlying strategic or philosophical orientation to environmental sustainability. The following sections analyze these CES orientations in greater detail, by eliciting prominent patterns and exploring plausible antecedents.

B. CES Orientations: Basic Statistical Trends

Prima-facie, from Table I, Minimalism emerges as the highest scoring (mean) orientation followed by ‘Reduce damage to physical environment’. Both Preserve Ecological Status Quo and Champion Business of Green score notably lower than the other two. This may be partly reflecting that both reducing damage to physical environment and ‘minimalism’ could be considered relatively more fundamental or “first-port-of-call” orientations with respect to sustainability, whereas the latter two may be considered as ingraining more evolved or visionary approaches to sustainability.

Interestingly, the median values are identical (and also higher) for all but Preserve Ecological Status Quo, in a sense setting this orientation apart, as the rarest amongst the four orientations. The distribution is almost normal in the case of both ‘Reduce damage to physical environment’ and Preserve Ecological Status Quo, whereas the other two are slightly skewed.

TABLE I
 CES ORIENTATIONS: DESCRIPTIVE STATISTICS

Variable	N	Mean	SD	Median	Min	Max
Reduce damage to physical environment	1080	0.53	0.26	0.5	0	1
Preserve ecological status quo	1081	0.36	0.3	0.33	0	1
Minimalism	1082	0.7	0.25	0.5	0	1
Champion business of 'green'	1072	0.41	0.27	0.5	0	1

Considering the values of the CES orientations at different points in time – 2005, 2007 and 2012 – it can be observed that there is a secular increase, suggesting that firms may have become more sensitive to the environment sustainability agenda in recent years. However, between 2005 and 2012, there is only a marginal increase in the mean value of ‘minimalism’. In the case of ‘Preserve ecological status quo’, the increase is but moderate. Notable increase can be seen in the case of both, ‘Reduce damage to physical environment’ and ‘Champion business of green’, especially between 2007

and 2012; this can also be observed in the increase in the respective median scores.

An analysis of the regional distributions of mean and median scores indicates that except in the case of ‘Preserve ecological Status-quo’, there are notable variations in the manner in which different key regions adopt the different environment sustainability orientations.

In terms of broad regional trends, North America and Western Europe score similarly and relatively high on all orientations, except in the case of the orientation of ‘Minimalism’. Japan stands out among all regions with respect to ‘Minimalism’, scores much higher than all others, and with a mean score of 0.81 and a median score 1.0 signifies that a dominant majority of Japanese firms are aligned this particular theme. This is particularly notable since the median scores are significantly higher than observed in all the other regions. In the case of North America and Western Europe, the median scores are identical for all the four orientations. China scores the lowest with regard to all orientations, except ‘Preserve ecology’ where it is by and large on par with other regions.

Amongst industries, significant variations can be observed with regard to CES orientations. This is not surprising since environmental impacts are likely to be closely associated with the nature of industrial processes and therefore would also influence environment management measures.

Of the seven key industries examined, prima-facie Telecom emerges as one where broadly, all the CES orientations appear relatively subdued in their adoption compared to other industries (the exception being in the case of ‘Preserve Ecology, where the mean scores are slightly better than that of BFSI and IT/Electronics; and ‘Reduce damage to physical environment’, where, though notably lower than other industries, it is better than BFSI).

Energy sector emerges as one where all orientations come up broadly in a similar range -exhibiting minimal variation-amongst/between orientations, whereas in most other sectors, sharper differences can be seen between the mean/median scores amongst different orientations. One plausible driver for this could be the nature of this sector – generally recognized for the environmental impact that they have. Due to this, stakeholder and regulatory pressure may be high on these firms to adopt intensive as well as different kinds of sustainability initiatives in order to support the legitimacy of their operations. The higher visibility associated with their relatively large sized operations also increases stakeholder pressure, and therefore many of these firms may tend to uniformly follow a range of environmental initiatives.

The following sections examine each of the four CES orientations in greater detail.

C. Reduce Damage to Physical Environment

This factor emerges from the grouping of the following four CES items or initiatives

- Reduce discharge of emissions, toxins and wastes to the environment
- Adopt life cycle analysis for reduced environmental impact

- Extensive water recycling/water conservation initiatives to reduce environmental impact
- Intensive processes to reduce impact of supply chain on the environment

The above items seem to reflect an approach that (a) typically involves concerted and focused efforts to reduce the impact of operations on the physical environment (e.g. reducing emissions, treating wastes etc. (b) systematically analyses opportunities to reduce environmental impact due to product design and across value chain (e.g. life cycle analysis) (c) attempts to reduce environmental degradation on account of firm's water usage – by conserving water and making efforts to balance water intake with recycling and rejuvenation and (d) attempts to reduce indirect impact on the environment on account of firm's immediate boundaries – i.e. on account of suppliers' operations (supply chain sustainability)

Reduce Damage to Physical Environment can also be considered as a fundamental requirement for environmental sustainability, since any progress with regard to sustaining the environment has to first address the issue of stemming the damage contributed directly by the firm's current operations and processes on an on-going basis. This theme can also be characterized as basic or essential, mainly from the perspective of the primary objective that it serves – of reducing the spoilage or deterioration of the environment - and not because the items/initiatives that make up this theme are necessarily simple from a technological, conceptual or process perspective. On the contrary, one can observe that this theme can straddle the entire spectrum from basic to highly advanced, complex or evolved, whether in terms of technological or process sophistication or level of integration with business.

The items that make up this factor project a very distinctive portrait of this orientation. The “environment” that is perceived to be at risk, or of relevance, seems to be the immediate physical environment. It is a conception of the environment that is most proximately and tangibly affected and directly/visibly in relation to the firm's operations and products. Such as, with the air/atmosphere that is getting polluted on account of emissions; or land/earth that is getting polluted on account of non-biodegradable wastes, on account of increasing landfill. The initiatives that make up this factor do not seem to directly address that the wider natural ecology that gets impacted by businesses – one that encompasses flora and fauna and bio-diversity in general. Given the inherent nature of these items, most of which appear to have an embedded technical/technology element, ab initio, some of the variation amongst firms with regard to this orientation can be expected to be idiosyncratic to the industry of affiliation or nature of operations, whereas some of it could also reflect the extent of evolution, maturity, or environmental sensitivity of the management.

North America is the only region that scores above the overall mean score for this orientation, whereas both Europe and Japan score marginally/moderately below the mean. China scores significantly below the mean score, highlighting the relatively thin allegiance to this theme. This reinforces the

presence of outliers among American firms. This pattern is prima-facie intriguing since Western Europe generally enjoys the reputation of being ahead of the curve in terms of rigor of environmental regulatory standards [14], [15], and therefore one might have expected to see greater adherence to this orientation amongst European firms and therefore a higher mean score. However, such reasoning could be potentially specious.

The industry-level distribution suggests that the highest scores for this orientation are for IT & Electronics, Pharmaceuticals and Retail, and to a slightly lesser extent Automobiles. All these sectors score well above the overall mean score of 0.53 and the overall median score of 0.5 (except Automobiles whose median score is 0.5). IT & Electronics industry seems normally distributed on this orientation, whereas both Pharmaceuticals and Retail firms, with moderate negative skewed distributions and relatively high median score of 0.75 suggest the presence of a few negative outliers moderating the effect of several firms scoring uniformly at the higher end. The Automobile sector with a positively skewed distribution, indicates the presence of a few high-scoring outliers within its midst.

Energy, Telecom and BFSI sectors all score below the sample mean score, especially BFSI that comes up the lowest by a significant margin in this regard. This is not surprising since this sector is also not a highly polluting one in terms of its direct impact, and therefore the relevance and scope of this orientation is also limited. It is interesting to observe that the Energy sector, despite its classification as an environmentally sensitive sector, comes up much lower than sectors such as IT & Electronics and Retail. Their score is lower likely because that they typically may not take up many initiatives related to LCA or supplier sustainability, two of the four items that make up this factor variable. However this merits a debate as to whether firms in this sector could collectively do more with regard to reducing damage to the physical environment.

D.Preserve Ecological Status Quo

This factor variable is a combination of three environment sustainability items as follows:

- Elaborate disaster prevention measures to prevent damage to life and ecology
- Carbon capture and storage (CCS) to capture carbon emissions as source
- Bio-diversity initiatives around plants

This factor is labeled as ‘Preserve Ecological Status Quo’, since the common theme that runs through the above items appears to be a concern for the environment that goes beyond just the physical (essentially quality of air, water and earth) that has an immediate impact on human life. Therefore, this factor can be interpreted as an orientation that concerns itself with protecting an all-encompassing natural ecology or natural environment, including flora, fauna and all living organisms. Essentially ‘Preserve Ecological Status Quo’ can be described as an approach that is (a) primarily oriented to try maintain the status quo of natural environment – maintain the ecology as it was given – reflecting in initiatives such as not releasing

carbon at all to the open environment (e.g. CCS); (b) highly sensitized to the dangers and prevention of accidents and blowouts that can cause serious and irreparable damage to ecological balance and (c) reflects a general concern for natural ecology – flora, fauna, and therefore seeks to preserve/restore biodiversity

Philosophically and conceptually it seems instructive to contrast this orientation with that of ‘Reduce Damage to Physical Environment’. The conception of what aspect of environment is perceived to be ‘‘at risk’’ demarcates the two orientations. When the dominant concern is about the physical environment, as an aspect that is more proximate or immediate impact for humans, then the initiatives seem more designed to reduce such ongoing impact. However when the concern is broader, about not damaging the greater natural ecology, then the focus of initiatives seem more aligned to preventing any disturbance at all (to the extent possible, or on a best effort basis); or in case disturbance of flora/fauna is inevitable, then they are about seeking ways and taking up measures to restore or appropriately remediate/compensate.

The industry-level distribution clearly indicates Energy sector as scoring significantly above all other industries, almost double that of Automobile industry, with the next highest mean score, and well more than double of all the others. Other than Energy and Automobiles, all other sectors have a mean score below the overall mean score. At the lower extreme, BFSI and IT & Electronics both emerge as the lowest scoring sectors. Except for Energy sector, with a median score of 0.67, all featured industries indicate a uniform median score of 0.33. The combination of mean and median scores suggest that except in the case of Energy sector, a majority of firms in all other industries typically subscribe to only any one of the three initiatives that make up the orientation of ‘Preserve ecological status quo’.

Despite the fact that the median scores are identical for all industries, some nuanced variations can be seen among other industries based on the mean scores. BFSI and IT & Electronics sectors coming up the lowest end, is likely in line with their industry attributes of not being inherently environmentally sensitive industries. The presence of positive outliers appears to be most pronounced in the case of the Automobile sector. The BFSI, IT& Electronics (and to a lesser degree, Telecom) sectors all indicate a negative skew, suggesting that while most firms score uniformly in an around the median, a few stragglers moderate the mean score.

One plausible reason for such environmental attitude could be an attitude of ‘compensation’ or ‘expiation’, for the damage or ‘sin’ – the extent of ecological impact generally caused by or attributed to a firm/industry. Energy firms, inherently extractive in nature and also being significant atmospheric/marine polluters, counts among ‘environmentally sensitive’ industries, and is also publicly perceived as such. Although not extractive, the automobile industry also is a significant environment spoiler, more indirectly, on account of the vehicles they put out on the road and the fossil fuels that they consume. In this context, it is likely that the burden of needing to remediate weighs heavily on these sectors, if not felt

naturally, at least forced by regulatory and stakeholder pressures.

E. Minimalism

This factor variable is a combination of two environment sustainability items: (a) Green initiatives to promote conservation/natural resource usage among stakeholders such as consumers and (b) Focus on reducing resource consumption (initiatives such as Reduce-Reuse-Recycle). This CES orientation is labeled as ‘Minimalism’ in view of the fact that both the constituent items seem aligned to the philosophy of conserving resources and minimizing usage of resources – which is distinct from reducing damage. Across all the four CES orientations, Minimalism emerges as the highest scoring one. Through the 1980s and 1990s, greening caught on in a big way among firms and consumer consciousness, resulting in a plethora of firms projecting ‘‘green’’ to leverage this sentiment and capture market share – ranging from consumer durables to cosmetics.

The coded data seem to suggest that Automobiles, Supermarket/Retail Chains, Electronics and Consumer Durable firms (Ford, Honda, Nissan, Samsung, Panasonic, Sony, HP, IBM, Fujitsu, Wal-Mart, Tesco, Woolworth etc.) are among the most prominent of the firms that report a lot of greening initiatives. On the other hand, the firms that do not discuss much about ‘‘greening’’ are the extractive industry firms – such as Energy, Mining and Metals. Therefore, what primarily emerges here is that most firms that can project greening on account of the nature of their product might tend to do it, whereas others such as energy and utility, who are anyway significantly ‘‘non-green’’ by their very nature, do not.

The regional distribution of scores for this orientation indicates Japan at the forefront, well above other regions with a median score of 1.0 and a mean score of 0.81. I infer from this that most Japanese firms are confirming to this ideal, with the exception of a few negative outliers. All other regions score at the same median level of 0.5, indicating a typical conformance to only one of the two items that make up the orientation. Western Europe and North America are very proximate in terms of their scores, while China lags notably behind all other regions. Barring Japan, all the three regions indicate a positively skewed distribution, suggesting that in each of these geographies, there are a few positive outliers that are greatly aligned to this orientation.

The industry wide distribution presents interesting patterns for this orientation by way of variations. Automobiles, IT & Electronics and Retail clearly emerge as the top sectors professing this orientation, and along with BFSI are the only sectors to score at or above the mean score. Even amongst these sectors, notable differences can be evinced: Almost all Automobile firms seem to be conforming to this orientation, with a mean of 0.98 and median of 1.0, and Retail is not too far behind; IT& Electronics and BFSI both come up marginally behind Retail, but the median of 1.0 for IT & Electronics sets it apart from BFSI’s corresponding 0.5.

It is notable that along with the Automobile sector, both IT & Electronics and Retail also have a median score of 1.0, but

these two sectors exhibit a negatively skewed distribution. This suggests that there is a large majority of firms uniformly aligned to this orientation, and likely that only a few firms scoring low or scoring zero that are skewing the mean scores. In contrast, at the lower end, coming up with scores below the overall mean are Energy, Pharmaceuticals and Telecom. These three industries come up more or less in a similar score band.

F. Champion Business of Green

This factor variable is a combination of four environment sustainability items as follows:

- Use of Certified Green Buildings
- Promote Green Businesses
- Utilize Carbon Credits/Carbon Trading
- Signatory to UNGC, Equator Principles etc. to champion for sustainability

The common theme that runs through these four items seems to be one that promotes greening and environment sustainability in the business ecosystem through a multi-pronged approach, seeking to highlight that CES is not only a good practice, but also pays for itself. Accordingly, even as there is an element in the initiatives that comprises this orientation, of projecting CES as an imperative or an element of leading by example or showcasing the firm's commitment to sustainability, there is also a strong element of highlighting that environment sustainability has an economically beneficial aspect to it. In a manner, this orientation can also be considered as a relatively evolved one, encompassing a mix of far-sightedness, environmental evangelism and economic opportunism.

Apart from direct implications for positive environmental impact, the items listed above that comprise this orientation can also be considered as embedding a significant element of signaling and communicating support for corporate action towards the sustainability agenda - initiatives that are designed to sensitize stakeholders and foster a culture of sustainability, whether within an organization, or within its broader business ecosystem. Certified green buildings are usually find pride of place in mention by corporate in the efforts they are doing for the environment; they not also serve to sensitize the occupants of the building, but also employees across the organization, visitors and public at large about the need for environmental care. Evidently there is also a positive publicity payoff for the firm, whether that is considered as a primary objective by the firm or not.

The regional distribution shows both North America and West Europe to be almost at the same level with regard to this orientation. Japan, somewhat mid-way, and China with a significant lag, both come up with mean and median scores lower than the mean and median for the overall sample. There may be some cultural, institutional or network effect influencing this pattern - particularly as this orientation goes beyond purely technical aspects to signaling and 'evangelizing' for sustainability.

The distribution is almost normal in the case of North America and Western Europe suggesting that there is fair degree of diffusion and consistency in the adoption of this

orientation across firms in these regions. Contrastingly, the distribution shows skews in the case both Japan and China.

The industry level distribution brings up BFSI, and although to a slightly lesser extent Energy and Pharmaceuticals as the leading industries adopting this orientation, with their central tendencies equal to or more than the central tendencies for the sample. Automobile and IT & Electronics come up slightly higher than Retail and Telecom - although all the four sectors score below the sample mean/median, and all of them also emerge with the same median score of 0.25, suggesting minimal alignment to this orientation.

In one sense, the industries that show a lower proclivity - Automobiles, IT & Electronics, Retail and Telecom are largely (Telecom seems a bit of an aberration) all are seen as impacting the environment moderately, but also have the inherent characteristics/ability to significantly showcase in public domain their commitment to sustainability through other initiatives that are closely aligned to their business operations. Automobile firms highlight hybrid models and alternative fuel use; IT & Electronics firms tend to be big on recycling and LCA driven product re-configurations. Retail firms, essentially supermarket chains, although do not suffer from the image of being environment spoilers, have significant opportunity to neutralize their carbon footprint through directly business related means - in logistics, through use of right packaging, promoting organic produce and products etc.. Telecom firms are not quite in the same league as these, but similar to IT& Electronics firms in some respects - and they also highlight RRR initiatives and energy-use reduction initiatives.

Considering the set of three industries that appear more aligned to this orientation - both BFSI and Pharmaceuticals/Healthcare can be considered as industries that are relatively "clean" and therefore alignment to this orientation of championing green is something that helps them advance their sustainability agenda. Energy clearly does not fit this description, because it is a highly environmentally sensitive industry - and ironically therein might lie the motivation; they are such egregious environment spoilers that they need to do all they can and more to ensure that they are seen as adequately addressing this issue.

Based on multiple logics, and making an assumption that firms may seek to optimize resources and band-width, it can be suggested that firms that adopt this orientation strongly are likely to be those that straddle either of the extreme positions: highly environment sensitive or relatively clean industries. On the other hand, sectors that are only moderately environment sensitive are likely to shy away from this orientation, exploring environmental initiatives that are connected to their core business or products.

IV. SUMMARY AND CONCLUSION

This research had the specific intent of achieving a greater understanding of the heterogeneity among CES practices. Previous studies have applied powerful organizational theories to explain several facets of heterogeneous firm behavior with

regard to environmental practices. Collectively, they provide valuable views of several of the “trees” and also enlightened us about the lenses that are appropriate to view them; but they do not yet provide a holistic view of the “woods” of diversity in CES practice. In a context where corporate approaches to the sustainability are still very emergent, our primary objective was to capture as much as possible of the CES heterogeneity that can be currently observed. The search was for a more integrated perspective of this diversity amongst practice and a preliminary attempt has been made to integrate, organize and frame this heterogeneity in terms environment sustainability orientations.

This research extracts from CS data that is rich in contextual diversity, and anecdotally and heuristically attempted to integrate this data to portray the nature of CES heterogeneity. The ‘taxonomy’ suggested, while frugal and simple is effective enough to frame and make sense of much of the CES diversity that one sees today.

The four orientations can be seen as distinctive, aligned broadly to a particular purpose. Yet they are not mutually exclusive in that they reflect some shades and feed off one another. The inferences based on the data patterns are at best conjectures, but yet provide some pointers for a more robust and in-depth empirical investigation. Nevertheless, from a prima facie investigation, it appears that factors at multi-levels likely influence the adoption of these orientations.

REFERENCES

- [1] P. Bansal and J. Gao (2006). Building The Future By Looking To The Past: Examining Research Published on Organizations and Environment. *Organization & Environment*. 19: 458.
- [2] J. A. Aragon-Correa, & S.Sharma (2003).A Contingent Resource-Based View of Proactive Corporate Environmental Strategy. *Academy of Management Review*. 28 (1).
- [3] P. Bansal (2005). Evolving Sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal* (26)
- [4] S. Sharma (2000). Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy. *Academy of Management Journal*, 43(4).
- [5] M. Delmas & M. Toffel (2010). Institutional Pressures and Organizational Characteristics: Implications for Environmental Strategy. Working Paper. Harvard Business School
- [6] L. Berchicci, & A. King (2007). 11 Postcards from the Edge: A Review of the Business and Environment Literature. *The Academy of Management Annals*,1(1), 513-547.
- [7] S. L. Hart (1995).A natural resource-based view of the firm. *Academy of Management Review*. 20(4).
- [8] S. L. Hart. S.L & G. Dowell (2011). A Natural-Resource-Based View of the Firm: Fifteen Years After. *Journal of Management*. (37).
- [9] L.F. Escobar, H. Vredenburg, H. (2011). Multinational oil companies and the adoption of sustainable development: A resource-based and institutional theory interpretation of adoption heterogeneity. *Journal of Business Ethics*, 98(1), 39-65.
- [10] M. V. Russo. The emergence of sustainable industries. *Strategic Management Journal*. (24).
- [11] S. Sharma and I. Henriques (2005). Stakeholder influences of sustainability practices in the Canadian forest products industry. *Strategic Management Journal*. (26).
- [12] B. W. Lewis, J.L. Walls, & G.W. Dowell, G. W. (2014). Difference in degrees: CEO characteristics and firm environmental disclosure. *Strategic Management Journal*, 35(5).
- [13] A. Locket, J.Moon, & W. Visser (2006). Corporate Social responsibility in Management Research: Focus, nature, salience and sources of influence. *Journal of Management Studies*, 43(1): 115-136.
- [14] R. E. Lofstedt, D. Vogel, Renn S. O., D.Slater, M.D. Rogers, M. D. (2001). The changing character of regulation: A comparison of Europe and the United States. *Risk Analysis*, 21(3), 399-416.
- [15] E. Rosenthal (2014). What makes Europe greener than the US. By Elisabeth Rosenthal: *Yale Environment*, 360.