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Uncovering Sustainable Business Practice Bundles

ABSTRACT

Our study sets out to identify bundles of sustainable business practices that are currently used by organizations, and determine the effectiveness of these practice sets. We utilize configuration theory to explain the need to focus on bundles of sustainable business practices rather than individual ones, and put forward the concept of equifinality – that different organizations should contextualize their sustainability strategies. Content analysis using Center Resonance Analysis is applied to over 1000 GRI reports for over 200 firms worldwide. The results demonstrate many different ways of organizing or bundling sustainable business practices to increase effectiveness.

KEYWORDS: Corporate Sustainability performance, Sustainable Business Practices, Organizational culture, Content Analysis, Corporate Social Responsibility

INTRODUCTION

Research has shown that the adoption of sustainable business(SB) practices can lead to a competitive advantage and, in turn, to improved business performance (Hart, 1995b, Porter and van der Linde, 1995). The link between successful implementation of SB practices and a firm's economic and environmental performance has been empirically demonstrated in the business and sustainability literature (e.g. Russo and Fouts, 1997). Indeed, today, several organizations have some form of sustainability strategy, implementing SB practices meant to reduce wastes, design green products, reduce fines for violating environmental regulations, improve community and stakeholder relations etc. Despite this increased uptake of sustainability practices, there has been very little research on successful corporate sustainability strategies, and the little that exists focuses on superficial constructs of sustainability and not on the deeply rooted values that are needed to achieve true sustainability (Linnenluecke and Griffiths, 2010, Russell and McIntosh, 2011).

Our research paper seeks to determine the most successful configurations of SB practices used by businesses. A number of studies utilizing bundles of management practices have demonstrated the ability to realize synergies and additive benefits that are much greater than the use of individual practices individually (Stavrou and Brewster, 2005). In the field of Human Resource Management, several researchers have shown the positive relationship between firm performance and (effective) HR practice bundles (Stavrou and Brewster, 2005, Toh and Morgeson, 2008, Guest and Conway, 2004). Though much of this bundling research has focused on HRM studies, researchers have reasoned that the study of bundles, as opposed to individual practices, can be applied to other organizational practices as well. Best-practice programs such as Lean Manufacturing, Just-in-Time, and Total Quality Management all propose the implementation of a bundle of practices that can work simultaneously and synergistically to create a streamlined, high quality system (Shah and Ward, 2003b). The concept of “bundling” is relatively new to the field of Business and Sustainability with very few studies addressing the usefulness of this approach.

Shah and Ward (2003a) found that applying various practices simultaneously would result in better operational performance because the practices are complementary and interrelated (Shah and Ward, 2003a). For example, adopting an end of life reuse/recycle program might not

be as effective if the product design has not used design for the environment principles. In fact, it may result in recycling costs being higher than simply disposing of the product.

We use the configurational approach to determine the bundles or configurations of practices in use, and using influence factors, we examine how successful the businesses were in demonstrating their commitment to sustainability. We first reviewed the Business and Sustainability literature, and also made use of existing sustainability indexes to determine the categories of SB practices that are being utilized in industry. We cluster-analyzed an international sample of organizations from various industries and of different sizes and types, to derive a taxonomy of SB practice bundles. Using computerized text analysis, we derived influence factors for each category of SB practices.

The research questions addressed are:

- (1) What bundles of SB practices are being adopted by organizations?
- (2) Which of these bundles communicate effective sustainability strategies?

This paper begins with a discussion of the current literature related to SB practices and configurational theory. This is followed by the methodology, the results, discussion, some conclusions and further work.

LITERATURE REVIEW

Sustainable Business Practices and Performance

Researchers have empirically demonstrated the link between successful implementation of SB practices and a firm's economic and environmental performance (Russo and Fouts, 1997, Pullman et al., 2009) Improved performance can be achieved through improved reputation, increased efficiencies, cost savings and establishing a competitive advantage over competitors. When a business commits to sustainability goals, stakeholders perceive this as a commitment towards excellence. The commitment to sustainability leads to the use of better resources, reduces stakeholder pressure on the company and improves its reputation (Stocchetti, 2012b, Lee, 2012, Hardjono and Van, 2001). Sustainability-driven goals also create the opportunity for adoption of new technologies and process analysis e.g. Total Quality Environmental Management (TQEM) and Life cycle assessment (LCA). Such practices improve efficiencies within the firm, which can save costs. Sustainability also represents an important advantage in terms of marketing (Stocchetti, 2012b). Businesses pursuing sustainability goals are able to market themselves to environmental and socially responsible customers, who are an increasing, high-value segment (Stocchetti, 2012b, Barthel and Ivanaj, 2006, Chabowsky et al., 2011). Much has been written on the advantages to business of pursuing sustainability goals, however, two of the most notable pieces of literature are that of Porter and van der Linde (1995), known as the 'Porter Hypothesis' and Hart (1995b) Natural Resource Based View of the Firm (NRBV).

Porter and van der Linde (1995) surmised that wastes and pollution were clear signs of inefficiencies in business operations. These inefficiencies could be translated into missed opportunities for building competitive advantages. By ignoring ways to reduce resource consumption, the organization misses out on profit opportunities (Berchicci, 2007). Businesses must also move beyond simple pollution prevention strategies, and frame this environmental improvement as 'resource productivity'. There are several opportunity costs not factored into waste calculations, such as "wasted resources, wasted effort, and diminished product value to

the customer” (Porter and van der Linde, 1995 p.2) and these all present opportunities for increased competitiveness.

A second part to the Porter Hypothesis is that in response to environmental regulations, businesses can develop innovative technologies and approaches that can minimize the cost of pollution. This can be achieved through the reuse or recycling of wasted resources, into something of value (Porter and van der Linde, 1995). Another means of innovation is by improving resource productivity. This can be through efficient use of particular inputs, better products or product yields (Porter and van der Linde, 1995). Porter & Linde proposed that businesses look at sustainability efforts as competitive opportunities and not as a threat or additional cost, if they are to remain competitive in the long run.

Hart’s NRBV theory looks at how a business can gain a competitive advantage by pursuing sustainability (Berchicci, 2007). NRBV builds on the Resource Based View of the firm (RBV), by focusing on resources that will allow the business to manufacture environmentally friendly products or reduce harmful by-products (Berchicci, 2007). The theory proposes that by building an environmentally sustainable economic activity, the organization will be able to achieve a competitive advantage. Hart proposes the strategies of 1. Pollution prevention; 2. Product stewardship and; 3. Sustainable development. These strategies are found in several research papers that attempt to build strategies towards sustainability (Dias-Sardinha and Reijnders, 2001, Russell et al., 2007, Russell and McIntosh, 2011).

Categories of Sustainable Business Practices

The literature on SB practices was reviewed to hypothesize the range of possible practices that businesses might adopt. A wide range of practices were found ranging from pollution and waste prevention measures to meeting the unmet needs of the poor (Hart, 2011). Some practices, such as compliance and resource use were reported as the most widely used and others were mentioned in very few (e.g., the use of clean energy sources). This implies that there might be some practices that are fundamental to achieving basic sustainability, while some other practices are more advanced and not found at the lower levels of sustainability implementation. Pollution prevention and meeting the needs of the poor are two practices found at the ends of the sustainability implementation spectrum. Following is list of practices categorized by broader SB practice headings.

1. Pollution Prevention/Waste Minimization: (Sarkis, 1998, Stead and Stead, 2013b, Perotti et al., 2012, Mittal et al., 2013, e.g., Hart, 2011, Stocchetti, 2012b). This is the most prevalent category, and supposedly, the most basic level of corporate sustainability mentioned in literature. Over the past two decades, firms have been pressured by various stakeholders to minimize or eliminate their emissions, effluents, and waste. Several regulations have mandated that businesses disclose their emissions of toxins or hazardous chemicals (Hart, 1995a). At the very basic level, companies control their levels of pollution using end of pipe solutions, which store or trap emissions and effluents for treatment and disposal (Hart, 1995a).

Another objective within this category of practices is the cost-effectiveness of reduced resource use. Some avenues for cost saving are reduced fines for emissions regulations, less material, water and energy use, recycling, and better efficiencies in operations. Some examples of practices that fall under this category are energy use practices, energy efficiency practices, travel & transport, water use, and material/resource use.

2. Environmental Impact Analysis and Environmental Reporting: (Stead and Stead, 2013a, e.g., Hart, 2011, Sarkis, 1998, Stocchetti, 2012b) The practices in this category involve integrating the 'voice of the environment' (Hart, 2011). Companies using these practices consider the impact of the processes and practices on the environment, and aim to minimize or eliminate their negative impacts. They can achieve these goals by using tools such as life cycle assessments. An environmental management system (EMS) may also be adopted. Many forms of Environmental Management Systems (EMS) have evolved over the past two decades. "An EMS is a formal set of procedures and policies that define how an organization will manage its potential impacts on the natural world and on the health and welfare of its workers and nearby citizens" (NDEMS, 2003). An EMS is a verifiable system meant to improve a facility's regulatory compliance, promote adoption of pollution-prevention measures, reduce resource use and waste and ensure continuous improvement in the management of its impacts on the environment (NDEMS, 2003). "EMS's are designed to increase employee awareness of environmental compliance issues and to create a culture focused on reducing environmental impacts" (Gallagher, nd). EMS's contain procedures for identifying, managing, monitoring and measuring environmental impacts, with the aim of tracking and reporting progress on the issue (Gallagher, nd).

With this set of practices businesses reap more savings from more efficient and environmentally friendly designs, and also develop a competitive advantage by presenting an image to the public of environmental stewardship. Some practices under this category are: the creation and adherence to an environmental policy, climate change strategy and/or environmental management system, as well as the use of environmental performance indicators. Efforts are also placed to maintain and protect biodiversity while minimizing or eradicating emissions, effluents, waste, the use of hazardous substances and hazardous waste.

3. Employee Attraction, Development and Retention: (Mittal et al., 2013, Sarkis, 1998, Stead and Stead, 2013a, Stocchetti, 2012a, e.g., Dos Santos et al., 2013). Companies on the path to sustainability must view their human capital as a valuable resource that must be developed and retained. By designing jobs to be intellectually and socially fulfilling, organizations can enhance the personal development of their employees and ultimately their performance in the firm. (Stead and Stead, 2013b).

Some practices that fall under this category are fair labor practices, freedom of association, work-life balance, employment security, fair pay and benefits, equal opportunities, training and education, talent attraction and retention and occupational health and safety.

4. Stakeholder Engagement: (e.g., Sarkis, 1998, Stead and Stead, 2013a, Stocchetti, 2012b, Mittal et al., 2013, Dos Santos et al., 2013). Organizations have influence over their employees, but also on their customers, their investors, their suppliers and society in general. Thus, focusing only on their employees is insufficient in achieving sustainability. This category requires "viewing the social capital of the firm, the business ecosystem, and the community as instrumental in value creation" (Stead and Stead, 2013b). Competitive advantages can be built through stakeholder relationships, reputation, and social capital. These present unique advantages to create value for the business (Stead and Stead, 2013b). The stakeholder engagement process is an important vehicle for developing consumer learning, which allows businesses to "attend to the consumption end of the value chain by engaging consumers in dialogue about sustainable consumption practices" (Stead and Stead, 2013b). Practices which fall under this category are shareholder democracy, executive compensation, shareholder structure, board independence, customer and product responsibility and social reporting.

5. Greening the Supply Chain: (e.g., Mittal et al., 2013, Sarkis, 1998).

Many of the categorizations of SB practices focus on internal organizational practices. Supply chain issues become relevant when addressing the link to external relationships (Sarkis, 1998). Supply chain management is defined as, “The series of companies including suppliers, customers and logistic operators that work together to deliver value package of goods and services to the end user “(Mittal et al., 2013). Direct interface with supply chain partners can enable an industry to reduce total inventory levels, lessen transaction costs, and respond more quickly to changes in the market. This implies that there is significant influence of a supply chain on environmental performance (Mittal et al., 2013).

Examples of practices in this category are supplier environmental assessment and sustainable procurement practices.

6. Innovation and Clean Technology: This category of practices is not as widely discussed as the previous five categories, but appears to be significant in satisfying sustainability principles (e.g., Hart, 2011, Mittal et al., 2013, Stead and Stead, 2013a). To achieve sustainability, businesses will require a step beyond analyzing its impacts on society and the environment and modifying its products, processes and practices to minimize those impacts. An approach that is transformational and innovative takes a step beyond analyzing impacts and mitigating them. Such an approach can “deliver long-term consumer value that protects and enhances the planet’s ecological and social systems and encourages sustainable consumption patterns that are in balance with the carrying capacity of the Earth” (Stead and Stead, 2013b). Utilizing clean technologies that reduce material and energy consumption, to produce products and services that are built with society and the environment in mind, can allow a business to position itself for competitive advantages as its industries evolve (Hart, 2011).

Some practices in this category are: end of life plans including ‘upgradability’, reusability, longevity, take-back and recycling of products. It also includes the development of new products that have been designed with sustainability principles, and thus use fewer resources/materials for the product, less packaging, and less or cleaner energy and water.

7. Sustainable Development: This final category is not widely discussed in the literature, but is also fundamental if a business wants to address all sustainability principles (e.g., Hart, 2011). This category requires businesses to look beyond profits and embrace their responsibility as institutions of change. Because businesses have an immense influence on the environment and society, it is not outrageous to think that they have a responsibility to ensure the livelihood of those around them. Hart (1995a) suggests that, “a sustainable development strategy means that firms must build markets in the “South” (low-income countries) while reducing the environmental burden created by this new economic activity.” Alleviating poverty for the poorest of the world’s citizens requires investment in a long-term commitment to market development, which may not result in enhanced short-term profits. However, a firm can build a reputation of commitment to sustainability, which might raise future performance relative to competitors (Hart, 2011, Hart, 1995a). Some examples of practices in this category are supporting human rights, codes of conduct/corruption & bribery; government relations/influence on public policy, and general business ethics.

Configurations of Practices

While SB practices have long been accepted as the avenue through which an organization implements a sustainability strategy, little research has focused on the successful implementation of corporate sustainability strategies or successful combinations of sustainability practices. A number of studies have shown that utilizing bundles of different management practices have effects that are much greater than the use of individual practices (Stavrou and Brewster, 2005, García-Castro et al., 2013). The configurational approach explains the benefits of combining SB practices.

Configurations represent a bundle of variables considered together and incorporate the interdependencies and interactions among the variables (Ostroff and Schulte, 2014). The organizational configuration refers to “any multidimensional constellation of conceptually distinct characteristics that commonly occur together” (Meyer et al., 1993). Within the literature the dimensions of environments, strategies, structures, cultures, ideologies, groups, processes, practices, beliefs, outcomes and others have been clustered into configurations. The level of analysis can be at any level – individuals, groups, departments, organizations, or groups of organizations (Meyer et al., 1993). Many studies have concentrated on applying configurational theory to the organizational level, grouping firms who share similar characteristics (Doty et al., 1993, Meyer et al., 1993).

Configurational practices have been shown to explain firm outcomes. The interactivity of the practices signal that there may be several paths to a desired outcome. The theory assumes that there is no single best path, and studies have shown that alternative paths can lead to the same organizational outcome – i.e. equifinality (Ostroff and Schulte, 2014). Configural equifinality implies that numerous configurations can result in equal levels of organizational effectiveness, as a result of the simultaneous tradeoffs and potential conflicts among the dimensions (Doty et al., 1993). The fields of organization theory, human resource management, corporate strategy, cross national government research have all demonstrated empirically that different bundles of high performance work practices are likely to lead to high financial performance (Doty et al., 1993).

Toh and Morgeson (2008), discovered a comprehensive set of human resource practice bundles, derived from a cluster analysis of HR practices used by 661 organizations. They also examined a set of contextual factors (organizational values and structure) and how they relate to the bundles. They reasoned that emphasizing practice bundles was more effective than using a single practice. This is in part because the “effectiveness of a particular practice can be significantly enhanced or reduced depending on the other practices simultaneously adopted” (Toh and Morgeson, 2008 p.1). Practice bundles may also explain a greater variance in organizational outcomes. And by studying individual practices in isolation, it may provide limited insight into a more complex phenomenon (Toh and Morgeson, 2008). Though Toh et al studied HR practices, they determined that the study of bundles, as opposed to individual practices, can be applied to other organizational practices.

METHODOLOGY

The Sample

The primary document for analysis is the Corporate Sustainability Report (CSR). We have chosen companies from the Global Reporting Initiative (GRI) database. GRI has over 8,000

organizations around the globe using their reporting standard. Their database consists of over 20,000 GRI reports across 38 sectors, making it a representative sample. The standardization of the reports made the GRI database also suitable for our analysis.

The reports submitted to the GRI database include: GRI reports, CSR reports, Annual Reports and Integrated reports. We collected over 1000 reports for 200 organizations over a 7-year period – 2009 to 2015, though not all organizations have reports for this entire period. Our sample was filtered to include: Large for-profit enterprises including Multi-national companies; Only production/Manufacturing firms; Only business with GRI-referenced reports; and Only reports written in English. The sectors included were: Agriculture; Automotive; Chemicals; Computers; Construction & Construction Materials; Consumer Durables; Energy; Equipment; Food & Beverage Products; Forest & paper products; Healthcare Products; Household & Personal products; Metal Products; Mining; Railroad; Technology Hardware; Textiles & Apparel; Tobacco; Toys.

Content Analysis

Once these filters were applied, 200 companies were randomly selected from the remaining list. The GRI reports for each business was downloaded and saved and converted to a .txt file using Adobe Acrobat. The text document was examined for any issues e.g. words stuck together, spelling, codes etc. and corrected. The text was changed to American English in the event that it was in British English. Cover pages, pages with numerical tables and photos, GRI index pages, contact pages were removed before conversion to .txt.

Codes: For SB practices, we developed codes based on the a priori themes or categories of SB practices found in the Business & Sustainability literature. We also aligned these with SB practice codes that have already been determined by other researchers. One such set of codes was developed by Tate et al. (2010). These codes can be viewed in Table A. The final set of SB practices codes can be seen in Table B.

Table A: Sustainable Business Practice codes (Tate et al., 2010)

	Supply	Institutional Pressure	Community Focus	Consumer Orientation	External Environment	Risk Management	Measures	Energy	Health	Green Building
1	Material	Lumber	Environmental	Program	Product	System	Emission	Year	Safety	Facility
2	Development	Farmer	Employee	Community	Management	New	Water	Percent	Health	Site
3	Supplier	Packaging	Business	City	Use	Global	Process	Good	Patient	Building
4	Store	Coffee	United States	Area	Equipment	Service	Waste	Report	Plant	Medicine
5	Chemical	Cotton	Customer	Performance	People	Corporate	Information	Effort	Project	Pharmaceutical
6	Standard	Home	Environment	Organization	Quality	Operation	Activity	Constraint	Gas	Disease
7	Forest	Supply	Group	Local	Consumer	World	Bank	Initiative	Power	Research
8	Factory	Battery	Industry	Child	Substance	Responsibility	Policy	Goal	Nuclear	Care
9	Seafood	Design	Sustainability	Center	Value	Data	Client	Time	Engine	Animal
10	Food	Association	Financial	School	Way	Market	Social	Total	Fuel	Drug
11	Training	Electronics	Discipline	Education	Nutrition	Award	Risk	Opportunity	Plan	Treatment
12	High	Land	National	Park	Right	Fiscal	Issue	Need	Coal	HIV/Aids
13	Resource	Tree	Compliance	Public	Brand	Diversity	International	Result	Cost	Healthcare
14	Team	Ingredient	Stakeholder	Support	Director	Change	Country	Control	Electric	Life
15	Aluminum	Natural	Sustainable	Habitat	Requirement	Sale	Air	Action	Refinery	Clinical
16	Seedling	Potential	Commitment	Foundation	Fat	Innovation	Impact	Day	Oil	Vaccine
17	Production	Benefit	Key	Member	Merchandise	Responsible	Number	Significant	Insulation	Medical
18	Manufacturing	Sourcing	Economic	Student		China	Asbestos	Utility	Electricity	Pain
19	Practice	Farm	Leadership	Performed			Improvement			
20	Paper	Computer	Environment	Protection			Investment			
21	Partner	Affiliate	Government	Loan			Carbon			
22	Resin	Source	Strategy	Partnership			Wastewater			
23		Recycling	Board	Family						
24			Approach	Charity						
25			Shareholder	Event						
26			Committee	Annual						
27			Council	Art						
28				Communication						

Crawdad Text Analysis: Once the codes were completed, we used Crawdad Text Analysis program to highlight the presence, influence and resonance of our code words. Crawdad is an analytical software package built to conduct center resonance analysis (CRA) (Tate et al., 2010, Corman et al., 2002)). CRA uses centering theory and analyzes text by creating networks of nouns and noun phrases that represent main concepts, their influence, and their relationships (Willis and Miertschin, 2010). Influence and Resonance are calculated for each individual word network. Influence is established if a word ties other words together in the text network and facilitates meaning (Willis and Miertschin, 2010, Canary and M., 2008). CRA is suitable for studying formal written communication such as CSR reports (Corman et al., 2002, Tate et al., 2010)

The use of Crawdad to perform CRA has been validated in a variety of scholarly and applied research. Several journals, such as the Journal of Business Ethics, the Strategic Management Journal, the Journal of Supply Chain Management and other leading communication journals, have published work that uses Crawdad to perform CRA (Tate et al., 2010)

Table B: Final Sustainable Business Practice Codes

Product & Process	Supply chain & Logistics	Energy/Water/ Materials	Monitoring /Reporting	Waste/Emiss ions	R&D/Clean Technology/ Green	Ethics	Developing world	External & Consumer Orientation	Community Focus & Philanthroph	Employees & Recruitmen	Internal Biz strategies	Financial & Risk	Health&Safety	Regulations/ Compliance	Environmental goals	
design	chain	coal	assessment	air	Green	aboriginal	africa	association	city	contractor	center	acquisition	accident	assurance	clean	
efficiency	copper/gold	consumption	audit	carbon	research	awareness	india	brand	community	employee	committee	board	chemical	compliance	climate	
electric	crop	electricity	certification	emission	technology	child	indonesia	campaign	engagement	employment	culture	capital	drug	government	conservation	
engineering	fuel/gas	energy	communicati	paper	university	code	mexico	country	local	family	future	cost	emergency	iso	environment	
equipment	international	material	data	recycling	innovation	fair	south	customer	province/reg	housing	goal/target	financial	hazardous	law	environmental	
exploration	metal	nuclear	gri	waste	building	responsible		industry	school	personnel	internal	growth	health	national	land	
factory	mineral	oil	impact	wastewater	construction			market	sports	promotion	leadership	investment	incident	regulation	natural	
food	network	power	index		facility			nutrition	student	skill	management	result	industrial	state	river	
improvement/progress	palm	refinery	indicator		site			passenger	charity	staff	policy	revenue	injury	requirement	species	
packaging	plantation	solar	measure/monitor					patient	foundation	team	strategy	risk	medical			
practice	source	utility	performance					public		training	Sustainability	shareholder	medicine			
quality	steel	water	report					service		workforce	Sustainable	tax	prevention			
rate	supplier /supply		responsibility					stakeholder			vision	value	safety			
process	wood												substance			
product													treatment			
use													workplace			
production																
	17	14	12	13	7	9	6	5	13	10	12	13	13	16	9	9

Analysis

We used Ward's method of hierarchical cluster analysis (Ward, 1963) to analyze the data collected for the study. Both the Euclidean distance and Pearson correlation were used to identify clusters within the data. "Cluster analysis is a multivariate analysis technique aimed at organizing information by categorizing objects on the basis of some measure of similarity to form relatively homogeneous groups, or clusters" (Aldenderfer and Blashfield, 1984 as cited in , Toh and Morgeson, 2008 p.867). Clustering is a relatively efficient method of classifying large amounts of information and compared to other methods, it produces results that are more interpretable (Toh and Morgeson, 2008). Cluster analysis has been used in studies categorizing organizations by the practices they adopt (Toh and Morgeson, 2008).

For the second phase of the study, we use cross tabs to determine whether any relationships exist between the SB practice bundles and the independent variables of size, industry, region, type of company, type of report and number of reports submitted.

We chose to control for size, industry, region, type of company, type of report and number of reports submitted because each of these influences organizational culture and SB practices discussed in the reports. The size of a business can have some effect on the SB practices a

business adopts, and larger revenue streams can lead to more investment in sustainability strategies. The industry within which the business operates is also a major influence on the SB practices it adopts. Certain industries are subjected to more environmental regulations than others, and also to greater scrutiny from customers (for example the oil industry). The region of operation also has an influence on the organizational culture of the business and the SB practices it adopts. Different regions will have more or fewer environmental and social regulations and customers will also have varying sustainability needs. For example, Europe has tighter regulations on food additives than North America does. We also considered the type of company, since private vs public organizations implement sustainability strategies differently. The type of report was important, since Annual reports and Integrated reports can differ significantly from Corporate Social Responsibility reports in their content and length. Finally, we also considered the number of reports submitted by these organizations, as the word count/influence may be affected by the frequency of submissions. See Appendix 1 & 2 for the control variables and the cross tabs analysis.

RESULTS

We used cluster analysis to bundle the SB practices, then conducted t-tests to determine whether significant differences existed between the clusters. The resulting eight clusters are described below:

Table C: Practice Cluster Descriptions

Cluster 1 - Compliant
Description: High in none. Lowest in most practices. Average practices: Ethics, Product& Process, Developing World & External/Customer Oriented. Primary sectors: Mining, Automotive, Aviation
Cluster 2 - Preventative
Description: High in Product & Process. Low in Supply chain; Finance & Risk; Health & Safety. Average in most practices. Primary sectors: Automotive, Chemicals, Equipment, Paper
Cluster 3 - Receptive
Description: High in Energy/Waste/Materials & Monitoring & Reporting. Low in Health & Safety. Average in most practices.
Cluster 4 - Responsive
Description: High in Internal Business Strategies & Health & Safety. Average in most. Low in none Primary region: Latin America & the Caribbean
Cluster 5 - Beginner
Description: High in Developing world, and very high in Finance & Risk &H&S. Low in most other practices. Average in Product & Process, Internal Business Strategies, Ethics and External Orientation Report type: Mostly Annual/Integrated reports submitted. High Annual reports may be reason for high Finance & Risk Primary sectors: Food & Beverage, Metals. Primary region: Africa – explains high in Developing World.
Cluster 6 - Proactive

Description: High in Internal Business Strategies & Monitoring & Reporting. Average in most. Low in none Primary sectors: Mining, Healthcare. Primary region: N America
Cluster 7 - Integrative
Description: High in Product & Process, Internal Business Strategy, Monitoring & Reporting & Health & Safety. Average in most. Low in none. Org type: Mostly made up of Multi-National Enterprises. Primary sectors: Chemicals, Food & Beverage
Cluster 8 – Adaptive
Description: High in Supply Chain, Developing world, & Monitoring & Reporting. Low in Research & Development & Health & Safety. Average in most. Primary region: Asia

Practice Cluster 1 'Compliant': This cluster scored the lowest in many SB practices, and was average in Ethics, Product & Process, Developing World & External/Customer Orientation. The primary sectors were found to be Mining, Automotive and Aviation and these organizations are predominantly found in developing countries.

The organizations in this cluster seem to be speaking mostly about developing their sustainability strategy through improving efficiencies to reduce costs, even though minimally. They also wrote on certain compliance-based practices. Because of their locations, they may need to remind their customers and stakeholders of their responsible actions with regards to the ethical treatment of employees and the wider public, particularly those in the developing world.

Researchers have described such an organization as 'Compliant' (Dias-Sardinha and Reijnders, 2001) and 'Reactive' (Sharma and Vredenburg, 1998) among others. These organizations focus on compliance and general codes of conduct and have started to realize the cost-effectiveness of certain sustainability practices, but have implemented very few successful SB practices. We chose to call this cluster of organizations 'Compliant' because they have mentioned only the bare minimum needed to meet regulations and expectations, and also talk about a few practices that can cut internal costs.

Practice Cluster 2 'Preventative': This group of organizations perform better than other clusters in the category of Product & Process SB practices. They are average in most other practices, but score low in the categories of Supply Chain, Finance & Risk and Health & Safety. As with cluster 1, this organization emphasizes product and process efficiency and waste minimization. On the flip side, these organizations do not talk much about raw materials and sourcing issues, growth and investments or the prevention of accidents. These organizations are mostly found in the Automotive, Chemicals, Equipment and Paper sectors.

The Business and Sustainability literature refers to businesses who take some small action on sustainability issues, mainly through resource efficiencies and waste minimization as 'Defensive' (Russell and McIntosh, 2011) Carroll, 1979; Henriques & Sadosky, 1999); 'Pollution Prevention' (Dias-Sardinha and Reijnders, 2001, Hart, 1995b) and 'Firefighter' (Hunt & Auster, 1990). We call this cluster Preventative, based on their focus on preventative measures of reducing resource use and minimizing wastes.

Practice Cluster 3 'Receptive': This third cluster of organizations performs higher than other clusters in the Energy/Waste/Materials (EWM) SB practice category as well as in Monitoring and Reporting. They perform poorly in Health & Safety relative to other clusters. The EWM

category is concerned with reducing consumption of Energy/Water/Materials within the operational and manufacturing segments of the organization. The Monitoring/Reporting category focuses on Public reporting and continuous monitoring of indicators. This set of companies talks about incorporating sustainability practices throughout their operations, with regards to resource efficiencies and waste minimization. They also speak a lot about measuring and reporting their sustainability goals.

This set of qualities has been referred to as 'Accommodative' (Carroll, 1979; Henriques & Sadosky, 1999; Russell & McIntosh, 2011), 'Efficiency Experts'. They focus on eco-efficiency of production processes through more effective use of process inputs, natural resources and energy. We call this cluster 'Receptive' because of their apparent emphasis on monitoring, and tracking, as well as being transparent. These qualities suggest an environment of learning and improvement, hence the name receptive.

Practice Cluster 4 'Responsive': This cluster of organizations performs highly on Internal Business Strategies for sustainability. They perform on par with the majority of the organizations in the sample, for the other practice categories. This makes them the most 'balanced' set of organizations. This cluster is found mostly in the Latin American and Caribbean region. Internal business strategies signal the involvement of leadership in implementing sustainability strategies. Internal strategies start to promote and develop culture for sustainability.

The literature has referred to this set of qualities as Managerial (Zadek, 2004); Pragmatist (Hunt & Auster, 1990); Commercial & environmental excellence (Roome, 1992); Strategic (Zadek, 2004); Strategic proactivity (Dunphy et al., 2007). We named this cluster 'Responsive' since it is focused on strategic, long-term improvements that can really start to effectively implement sustainability strategies.

Practice Cluster 5 'Beginner': This fifth cluster of organizations scores highly in the SB practice categories of Developing World, Finance and Risk, and Health and Safety. They score low on most of the other practices, with the exception of Product & Process, Internal Business Strategies, Ethics and External Orientation, where they have an average score. Most of the reports in this cluster were annual or integrated reports; the primary sectors were Food and Beverage and Metals; and the primary region is Africa.

Research has considered these qualities to belong to 'Compliance plus & quality assurance' (Roome, 1992); 'Concerned citizen' (Hunt & Auster, 1990). We call this cluster 'Beginner' because they are moving up from the compliance phase.

Practice Cluster 6 'Proactive' – This cluster performs highly in Internal Business Strategies and Monitoring and Reporting. All other SB practice categories are average, with none being low. The Primary sectors are Mining and Healthcare. The primary region is North America. Like cluster 4 (Responsive), this cluster of organizations has begun to implement long-lasting and strategic changes towards sustainability, as noticed by their performance in Internal Business Strategies. They are also strong in monitoring, tracking and reporting their progress.

This set of qualities have been termed as 'Proactive' (Carroll, 1979; Henriques & Sadosky, 1999; Russell & McIntosh, 2011) in the literature, describing them as having a consistent pattern across a range of sustainability issues. We use the term 'Proactive' to name this group of organizations.

Practice Cluster 7 'Integrative': The seventh cluster performs highly on Internal Business strategy and Monitoring and reporting, Product and Process as well as Health and Safety. It performs on par with the other clusters in all other SB practice categories. This cluster is made up of mostly Multi-National Enterprises (MNE's), and the primary sectors are Chemicals and Food and Beverages.

The literature has referred to these qualities as belonging to the Proactivist (Hunt & Auster, 1990); and Leading edge (Roome, 1992). We call this cluster Integrative, as they are successfully managing to internally drive a culture change for sustainability, that has apparent effects on the other non-internal sustainability strategies.

Practice Cluster 8 'Adaptive': This final cluster performs highly on Supply Chain, Developing World and Monitoring and Reporting SB practice categories. It performs lower than other clusters in the Research and Development and Health and Safety categories. The other categories have average performance. The primary region this cluster is found in is Asia. In fact, all of the companies within this cluster are located in Asia.

The literature has referred to this set of qualities as 'Strategic' (Zadek, 2004); Strategic proactivity (Dunphy et al., 2007); and Product Stewardship (Hart, 1995b). We call this cluster 'Adaptive' because of its ability to transform based on market demands.

DISCUSSION AND FUTURE WORK

SB practices are discussed quite extensively in the Business and Sustainability literature and researchers have theorized that organizations lie on a 'sustainability spectrum' based on the range of SB practices they have adopted. Typically, you would find a 'compliant' organization as the first rung of the ladder. Concerned only with meeting regulations and reducing liability costs, these organizations are considered the lowest performing group in terms of sustainability. The progression moves onto the cost-cutters or cost-minimizers, who adopt 'low-hanging' SB practices that save resources and reduce wastes. These are more geared towards end-of-pipe solutions. Further along the spectrum we would start to see some differentiation in terms of focus on employees, suppliers and sourcing, society and the communities, stakeholders etc. Then we would see some investment in sustainable technologies or sustainable designs that can achieve an enhanced reputation for the organization. Finally, we have a set of organizations that share concerns for our societies and the environment; those who commit to helping reverse wicked problems and promote well-being, equity and justice in our societies.

The results of this study depicted just that: A spectrum of organizations focused on different SB practices that give some indication of their advancement on sustainability goals. This research highlighted eight significantly different clusters within the sample. The organizations were sorted by the bundles of SB practices mentioned in the reports, and the result showed varying performance in the SB practices. They were ordered by this performance, and the end result was a hierarchy of clusters, with the same basic structure as that of the literature findings – compliant at the bottom rung, with a graduated differentiation in the performance on and in the type of SB practices mentioned.

One interesting finding was that in the higher performing clusters, all SB practices were scored as average or higher. This finding suggests that companies who are better at talking about sustainability, may understand all of the various aspects that need focus, and create a more balanced approach to addressing sustainability concerns. Then on top of this balanced, average

performance, they each differentiate themselves by focusing on one or more SB practices, that they perform highly on. Even those organizations performing poorly, have addressed all or most SB practices.

This balanced approach – though interesting, is not that surprising. Companies who show some interest in sustainability strategies, understand the importance of all three spheres of sustainability – the environment, society and the economy. Thus, any adopted strategy would include practices from all of these realms. Furthermore, this information comes from a Corporate Sustainability Report (CSR). These reports, by nature are meant to bring out discussions in all three realms of sustainability. The Global Reporting Index (GRI) scores organizations by their implementation of SB practices, and thus I would expect to see mention of a wide range of SB practices. This can be seen as a limitation of this research, and there is room for further analysis of other company documents.

Those companies who did outperform others in certain categories, in many cases could have some contextual explanation for their high-performance. The Location and Sector variables seemed to have the highest influence on performance in certain categories. This makes sense because these CSR reports are meant for customers, shareholders and others who may have an investment in a specific location or a particular sector/industry. Thus, one would expect companies to write more about what they are doing with their local communities, and pay attention to those issues that are related to the area. For example, companies from developing countries, scored higher in Developing world SB practices. Likewise, companies will write more on what is of particular interest in certain industries. For example, we saw high scores in Health and Safety for clusters with a high proportion of organizations from the Food and Beverage sector. This aligns well with contingency theory which proposes that organizations will adapt their structure to maintain fit with changing contextual factors, to attain high performance (Sousa and Voss, 2008). Whilst this may not be very surprising finding, it is an interesting one that has not been investigated much in the literature. This presents a further research opportunity to identify some of the core factors that influence a business' adoption of SB practices. This could be a significant contribution to industry and give some basis upon which businesses can select which SB practices to adopt.

A final interesting finding is that three of the top performing clusters were very close in terms of performance (Proactive, Integrative, Adaptive). What differentiated them was the SB practices that they performed highly on. This finding is particularly striking because it aligns with Configuration theory and the concept of equifinality. The theory puts forward that there is no single best path to success within organizations, and studies have shown that alternative paths (bundles of practices) can lead to the same organizational outcome – i.e. equifinality (Ostroff and Schulte, 2014). A large part of this research is based on the premise that businesses can achieve high levels of sustainability performance in many different ways, or by using strategies that are unique to their set of circumstances, or context. The observation of these high performing clusters differentiating in their top SB practices, does support the notion of equifinality. If this is the case, this presents a great opportunity to further analyze this space. It would be of great benefit to study organizations who are known sustainability leaders, to understand the set of SB practices they adopt, and also their performance on them. In conjunction with the above research on context and adoption, we believe this work would have a significant impact on corporate sustainability as whole – dispelling the myth that there is one-track to achieving sustainability success.

The clustering of organizations by SB practices, empirically, is a first in the Business and Sustainability literature. We see the implications of this work being a first step into many avenues:

1. Understanding what factors shape sustainability strategies. What practices do organizations adopt in order to 'fit' within their contextual factors? How much does location or sector explain SB practice performance?
2. What does sustainability success look like in different leading organizations? How does their context affect their performance in certain SB practices? How would this affect sustainability performance?

These questions present a multitude of opportunities to expand this research space, and provide insights that would prove valuable to organizations pursuing sustainability goals.

CONCLUSION

One of the limitations of using content analysis on company reports is that we are analyzing what a company *wants to talk about* and not necessarily *what it is they are doing* or actually care about. This is particularly true in the case of Corporate Sustainability Reports. Companies want to communicate their sustainability efforts to their stakeholders and may not report activities or actions that are contrary to this main goal. More analysis using other data sources, example Internal reports, website data or even other public information regarding the company's sustainability efforts.

Sustainability practices and indicators have typically been used as measureable items that taken as a group or bundle, can contribute to satisfying corporate sustainability principles. Though the practices have been examined widely in the literature, little thought has been given to the synergistic effect of utilizing bundles of SB practices. Researchers from other fields have understood the effect of bundles of practices on organizational performance, and agree that practice bundles can simultaneously and synergistically work to create a high-quality system. Our work is a starting step to examine this topic.

APPENDIX 1:

Control Variables

Company name	Size	Organization type	Sector	Country	Region		no of rep
	1						
Adeka	Large	Private company	Healthcare Products	Japan	Asia	CSR	6
AEM (Atomenergom)	Large	Private company	Energy	Russian Federation	Europe	AnnIntg	5
AGCO Corp	MNE	Private company	Agriculture	United States of America	Northern Ame	CSR	3
Agilent Technologies	Large	Private company	Technology Hardware	United States of America	Northern Ame	CSR	6
Allergan	MNE	Private company	Healthcare Products	United States of America	Northern Ame	CSR	0
Alpha Natural Resou	Large	Private company	Mining	United States of America	Northern Ame	AnnIntg	3
ALROSA PJSC	Large	State-owned company	Mining	Russian Federation	Europe	CSR	4
Alsea	MNE	Private company	Food and Beverage Pro	Mexico	Latin America	AnnIntg	6
Altech	Large	Private company	Technology Hardware	South Africa	Africa	AnnIntg	6
Amec Foster Wheele	Large	Private company	Construction	United Kingdom of Great Britain	Europe	AnnIntg	5
Amgen Inc.	MNE	Private company	Healthcare Products	United States of America	Northern Ame	CSR	5
AMR	Large	Private company	Aviation	United States of America	Northern Ame	CSR	5
Apache Corporation	Large	Private company	Energy	United States of America	Northern Ame	CSR	5
Apoteket	Large	State-owned company	Healthcare Products	Sweden	Europe	AnnIntg	3
APP-China	MNE	Private company	Forest and Paper Produ	Mainland China	Asia	CSR	5
AquaChile	Large	Private company	Food and Beverage Pro	Chile	Latin America	CSR	3
Arca	MNE	Private company	Food and Beverage Pro	Mexico	Latin America	CSR	5
ArcelorMittal South	Large	Private company	Metals Products	South Africa	Africa	AnnIntg	4
ARM (African Rainbo	Large	Private company	Mining	South Africa	Africa	CSR	7
Asia Pulp&Paper Ind	MNE	Private company	Forest and Paper Produ	Mainland China	Asia	CSR	5
Astellas Pharma Inc	MNE	Private company	Healthcare Products	Japan	Asia	CSR	6
BAUER AG	MNE	Private company	Construction	Germany	Europe	CSR	6
Brown-Forman Corp	Large	Private company	Food and Beverage Pro	United States of America	Northern Ame	CSR	4
Bühler	MNE	Private company	Equipment	Switzerland	Europe	AnnIntg	6
Buildmax Ltd	Large	Private company	Construction Materials	South Africa	Africa	AnnIntg	4
Byggmax	Large	Private company	Construction Materials	Sweden	Europe	CSR	4
Canon	MNE	Subsidiary	Technology Hardware	Japan	Asia	CSR	7
Canon Europe	MNE	Private company	Equipment	Netherlands	Europe	CSR	6
Canon Oceania	MNE	Private company	Consumer Durables	Australia	Oceania	CSR	3
Carlsberg Group	MNE	Private company	Food and Beverage Pro	Denmark	Europe	CSR	6
Celestica	MNE	Private company	Equipment	Canada	Northern Ame	CSR	5
CH. KARNCHANG	Large	Private company	Construction	Thailand	Asia	CSR	3
Chambal Fertilizers a	Large	Private company	Chemicals	India	Asia	CSR	6
Chevron Corporatio	MNE	Private company	Energy	United States of America	Northern Ame	CSR	5
China Minmetals Cor	Large	State-owned company	Mining	Mainland China	Asia	CSR	4
China National Build	Large	State-owned company	Construction Materials	Mainland China	Asia	CSR	4
China National Petro	Large	State-owned company	Energy	Mainland China	Asia	CSR	5
China Resources Pov	Large	State-owned company	Energy	Mainland China	Asia	CSR	3
Chubu Electric Powe	Large	Private company	Energy	Japan	Asia	AnnIntg	7
Coca-Cola Belgium-L	MNE	Private company	Food and Beverage Pro	Belgium	Europe	CSR	4
Coca-Cola Serbia	MNE	Subsidiary	Food and Beverage Pro	Serbia	Europe		6
Colgate-Palmolive	MNE	Private company	Healthcare Products	United States of America	Northern Ame	CSR	5
CONSOL Energy	Large	Private company	Energy	United States of America	Northern Ame	CSR	4
Consorcio ARA	Large	Private company	Construction	Mexico	Latin America	CSR	5
Control Instruments	MNE	Private company	Automotive	South Africa	Africa	AnnIntg	4
Cummins	MNE		Equipment	United States of America	Northern Ame	CSR	6
Danone Group	MNE	Private company	Food and Beverage Pro	France	Europe	CSR	6
Deere & Company	Large	Private company	Equipment	United States of America	Northern Ame	CSR	4
Domex Group	MNE	Private company	Consumer Durables	Viet Nam	Asia	CSR	3
Dominion	Large	Private company	Energy	United States of America	Northern Ame	CSR	6
Domtar	Large	Private company	Forest and Paper Produ	Canada	Northern Ame	CSR	4
Dr. Reddy's Laborato	Large	Private company	Healthcare Products	India	Asia	CSR	6
Du Pont	MNE	Private company	Chemicals	United States of America	Northern Ame	CSR	4
Eastman Kodak Com	Large	Private company	Equipment	United States of America	Northern Ame	CSR	5
Edison	Large	Private company	Energy	Italy	Europe	CSR	6
Eldorado Gold	MNE	Private company	Mining	Canada	Northern Ame	CSR	3
Eletrosul	Large	Subsidiary	Energy	Brazil	Latin America	CSR	3
Eli Lilly	MNE	Private company	Healthcare Products	United States of America	Northern Ame	CSR	4
Ence Energía y Celul	Large	Private company	Forest and Paper Produ	Spain	Europe	CSR	3
Eni S.P.A.	MNE	Private company	Energy	Italy	Europe	AnnIntg	6
Epta Group	MNE	Private company	Consumer Durables	Italy	Europe	CSR	3
Eurochem	Large	Subsidiary	Chemicals	Russian Federation	Europe	CSR	6
Fagerhult Group	MNE	Private company	Equipment	Sweden	Europe	CSR	5
FCC Construcción	Large	Private company	Construction	Spain	Europe	CSR	4
Fraport AG	Large	Private company	Aviation	Germany	Europe	CSR	5
Gas Natural Fenosa	Large	Private company	Energy	Mexico	Latin America	CSR	6
Gazprom Neft	Large	Subsidiary	Energy	Russian Federation	Europe	CSR	6
General Motors Com	MNE	Private company	Automotive	United States of America	Northern Ame	CSR	4
Heineken N.V.	MNE	Private company	Food and Beverage Pro	Netherlands	Europe	CSR	5
Iamgold	MNE	Private company	Mining	Canada	Northern Ame	CSR	4
Iberdrola Renovable	Large	Private company	Energy	Spain	Europe	CSR	7
Iberpapel Gestión, S	Large	Private company	Forest and Paper Produ	Spain	Europe	AnnIntg	4
ICDAS	Large	Private company	Metals Products	Turkey	Asia	CSR	3
Indorama Ventures F	MNE	Private company	Chemicals	Thailand	Asia	CSR	5
Indra	Large	Private company	Computers	Spain	Europe	AnnIntg	6
International Flavors	MNE	Private company	Household and Person	United States of America	Northern Ame	CSR	5
ISA	MNE	State-owned company	Energy	Colombia	Latin America	CSR	5
LSI/Broadcom	MNE	Private company	Technology Hardware	United States of America	Northern Ame	CSR	4
Mazda	Large	Private company	Automotive	Japan	Asia	CSR	6
Merck & Co., Inc.	MNE	Private company	Healthcare Products	United States of America	Northern Ame	CSR	5
Mexico ICA	Large	Private company	Construction	Mexico	Latin America	CSR	3

APPENDIX 2:
Crosstabs Practice Clusters/Control Variables

			cluster * sector Crosstabulation																Total		
			sector																		
			Mining	Automotive	Healthcare Products	Aviation	Chemicals	Food and Beverage Products	Energy	Construction	Equipment	Construction Materials	Agriculture	Consumer Durables	Forest and Paper Products	Computers	Household and Personal Products	Metals Products	Technology Hardware		
cluster	Cluster 1	Count	4.0	6.0	3.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	2.0	28	
		Expected Count	2.3	2.3	2.0	0.4	2.0	2.7	5.2	2.0	1.8	1.3	0.7	1.3	0.7	1.3	0.5	0.7	0.9	1.3	28.0
		% within cluster	14.3%	21.4%	10.7%	7.1%	3.6%	3.6%	3.6%	7.1%	3.6%	3.6%	7.1%	3.6%	7.1%	3.6%	0.0%	0.0%	0.0%	10.7%	100.0%
Cluster 2	Count	0.0	5.0	2.0	0.0	5.0	3.0	2.0	2.0	5.0	2.0	0.0	1.0	5.0	1.0	1.0	1.0	1.0	2.0	36	
	Expected Count	3.0	3.0	2.5	0.5	2.5	3.5	6.7	2.5	2.3	1.6	0.9	0.9	1.6	0.9	1.6	0.7	0.9	1.2	36.0	
	% within cluster	0.0%	13.9%	5.6%	0.0%	13.9%	8.3%	5.6%	5.6%	13.9%	5.6%	0.0%	2.8%	13.9%	2.8%	2.8%	2.8%	0.0%	5.6%	100.0%	
Cluster 3	Count	1.0	0.0	0.0	0.0	0.0	1.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	
	Expected Count	0.6	0.6	0.5	0.1	0.5	0.7	1.3	0.5	0.4	0.3	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.3	7.0	
	% within cluster	14.3%	0.0%	0.0%	0.0%	0.0%	14.3%	71.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
Cluster 4	Count	3.0	0.0	0.0	0.0	1.0	3.0	15.0	3.0	3.0	2.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	34	
	Expected Count	2.8	2.8	2.4	0.4	2.4	3.3	6.3	2.4	2.2	1.5	0.5	0.9	1.5	0.7	0.9	1.1	1.1	1.5	34.0	
	% within cluster	8.8%	0.0%	0.0%	0.0%	2.9%	8.8%	44.1%	8.8%	8.8%	5.9%	0.0%	0.0%	2.9%	2.9%	0.0%	2.9%	2.9%	2.9%	100.0%	
Cluster 5	Count	2.0	1.0	2.0	0.0	1.0	5.0	4.0	4.0	1.0	2.0	0.0	0.0	1.0	1.0	1.0	2.0	4.0	1.0	31	
	Expected Count	2.6	2.6	2.2	0.4	2.2	3.0	5.8	2.2	2.0	1.4	0.8	0.8	1.4	0.6	0.8	1.0	1.4	1.4	31.0	
	% within cluster	6.5%	3.2%	6.5%	0.0%	3.2%	16.1%	12.9%	12.9%	3.2%	6.5%	0.0%	0.0%	3.2%	3.2%	6.5%	12.9%	3.2%	3.2%	100.0%	
Cluster 6	Count	3.0	0.0	3.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	
	Expected Count	0.6	0.6	0.5	0.1	0.5	0.7	1.3	0.5	0.4	0.3	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.3	7.0	
	% within cluster	42.9%	0.0%	42.9%	0.0%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
Cluster 7	Count	0.0	1.0	1.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	1.0	2.0	0.0	0.0	1.0	0.0	0.0	10	
	Expected Count	0.8	0.8	0.7	0.1	0.7	1.0	1.9	0.7	0.6	0.4	0.3	0.3	0.4	0.2	0.3	0.3	0.3	0.4	10.0	
	% within cluster	0.0%	10.0%	10.0%	0.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%	10.0%	20.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	100.0%	
Cluster 8	Count	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	
	Expected Count	0.3	0.3	0.2	0.0	0.2	0.3	0.6	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.0	
	% within cluster	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	66.7%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
Total	Count	13	13	11	2	11	15	29	11	10	7	4	4	7	3	4	5	7	156		
	Expected Count	13.0	13.0	11.0	2.0	11.0	15.0	29.0	11.0	10.0	7.0	4.0	4.0	7.0	3.0	4.0	5.0	7.0	156.0		
	% within cluster	8.3%	8.3%	7.1%	1.3%	7.1%	9.6%	18.6%	7.1%	6.4%	4.5%	2.6%	2.6%	4.5%	1.9%	2.6%	3.2%	4.5%	100.0%		

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